





last slide

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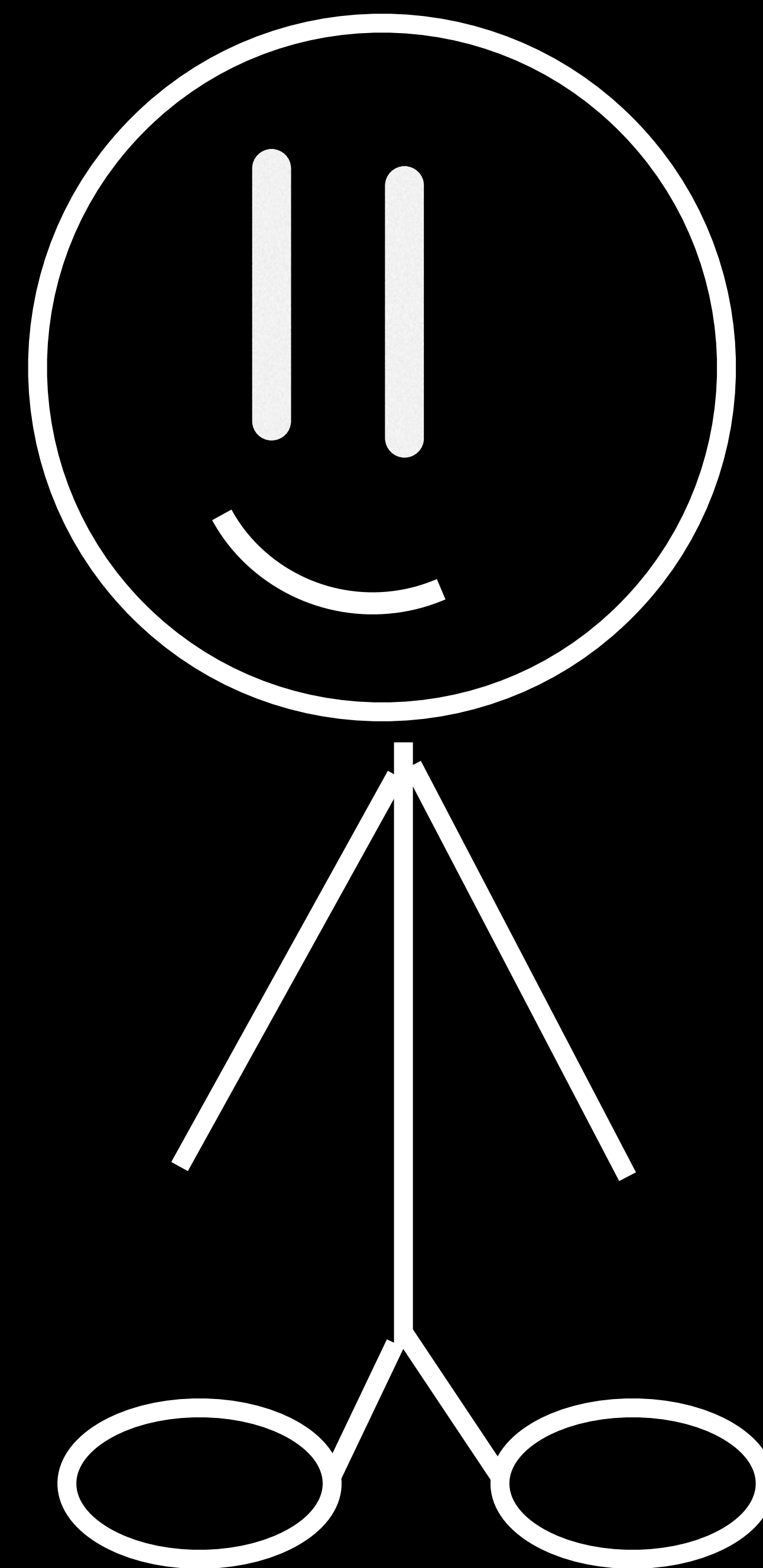
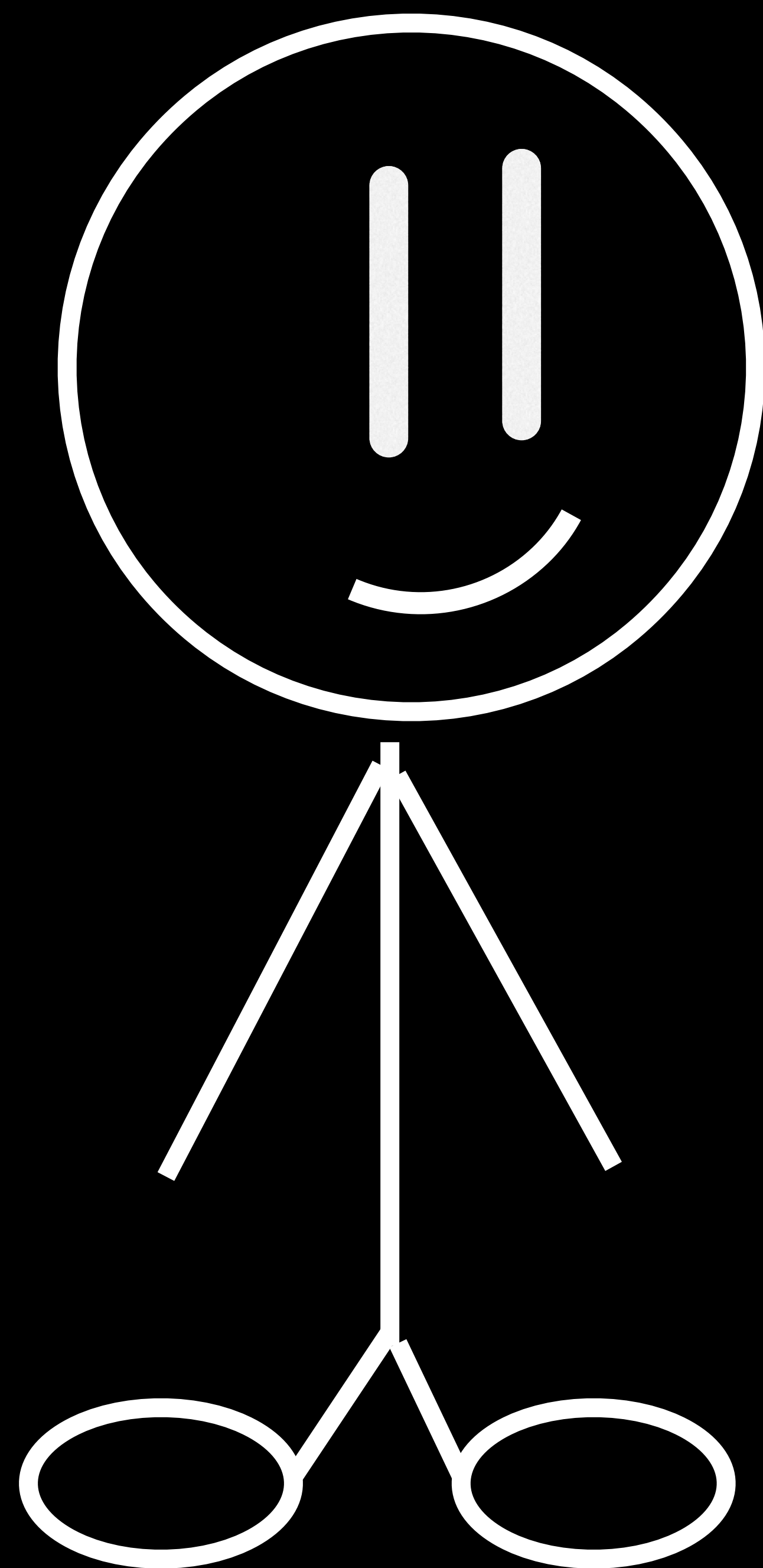


# Motivating Students in the 21<sup>st</sup> Century

@paulandersen  
bozemanscience.com

# Motivating Students Today

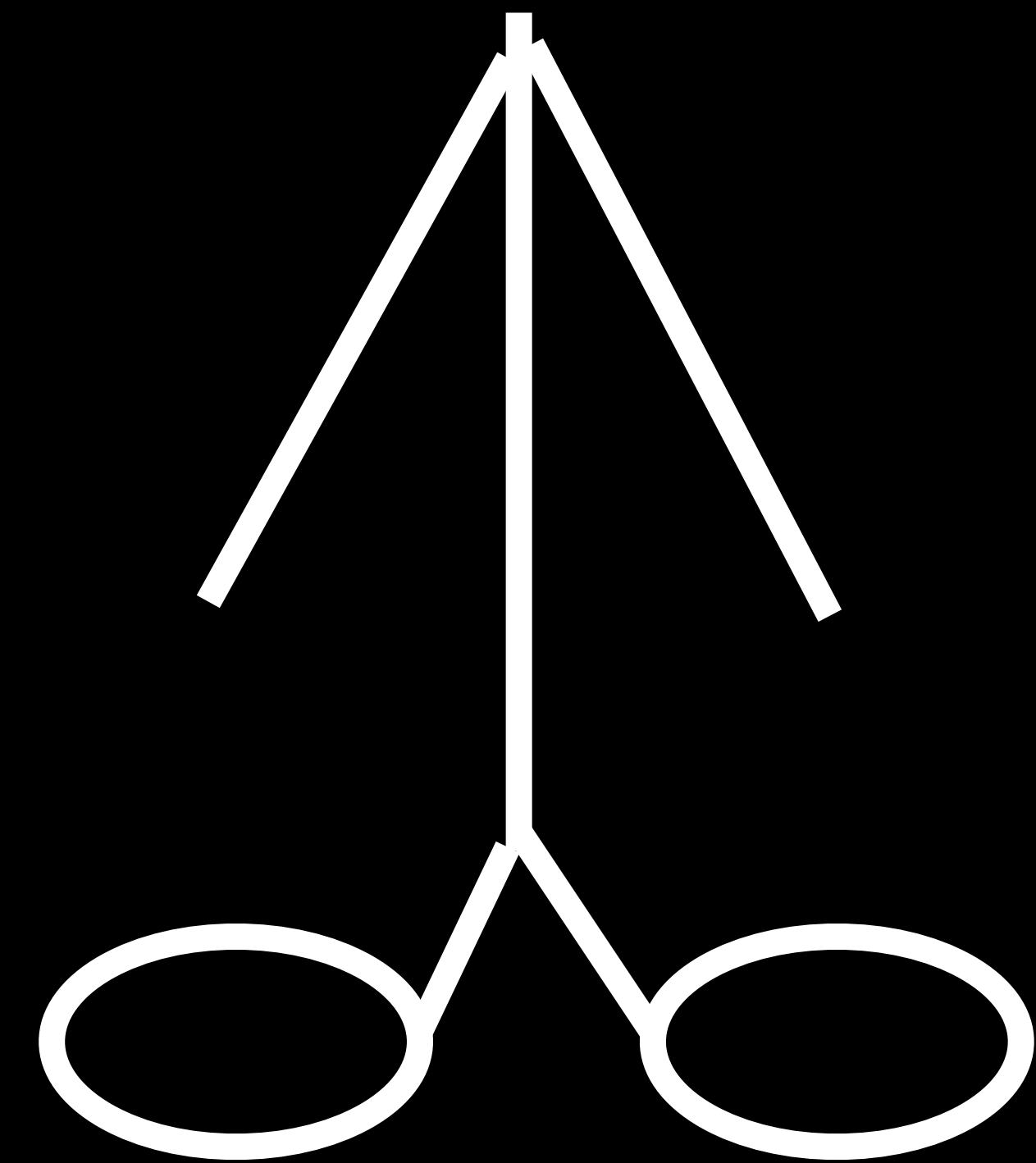
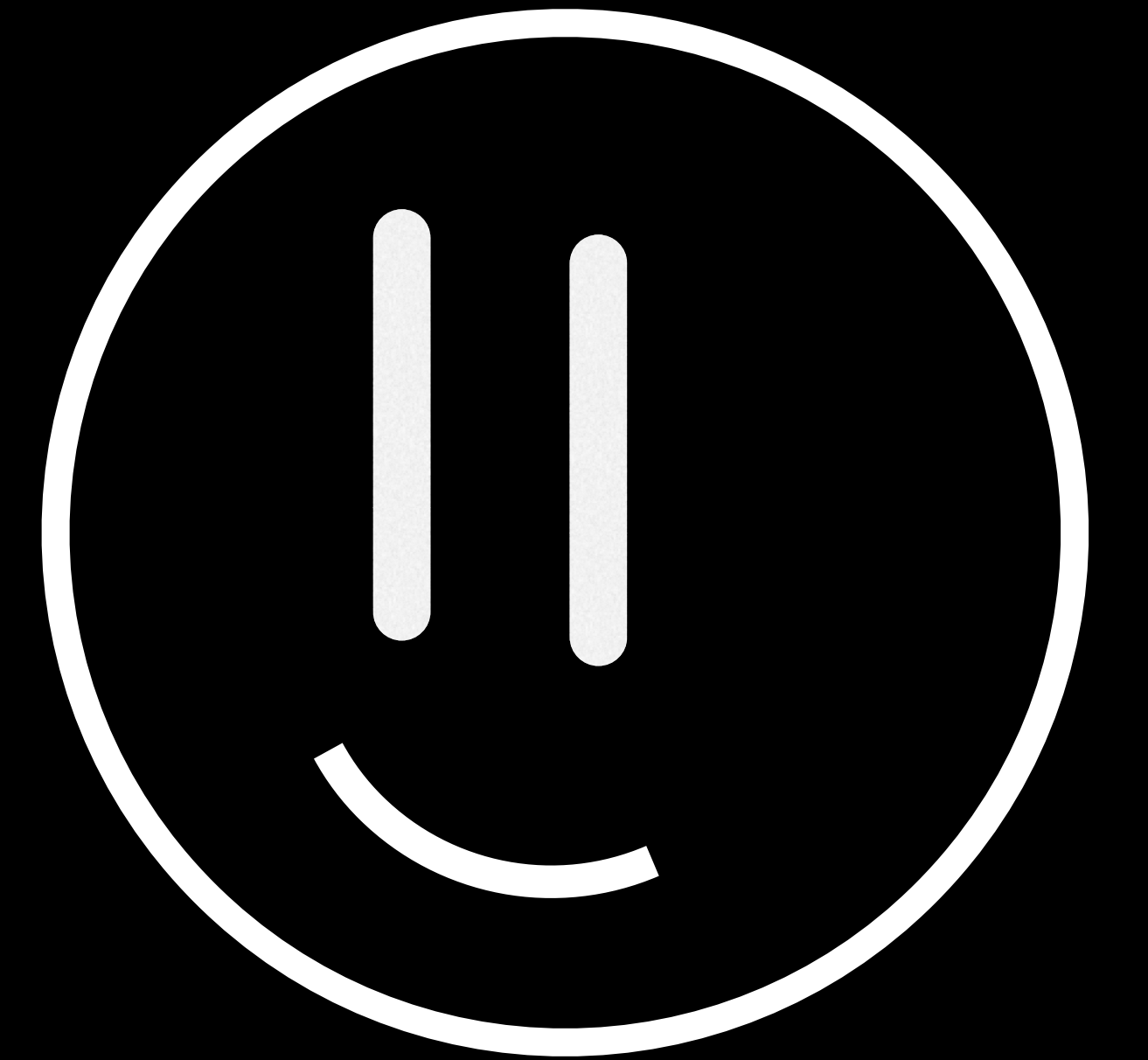
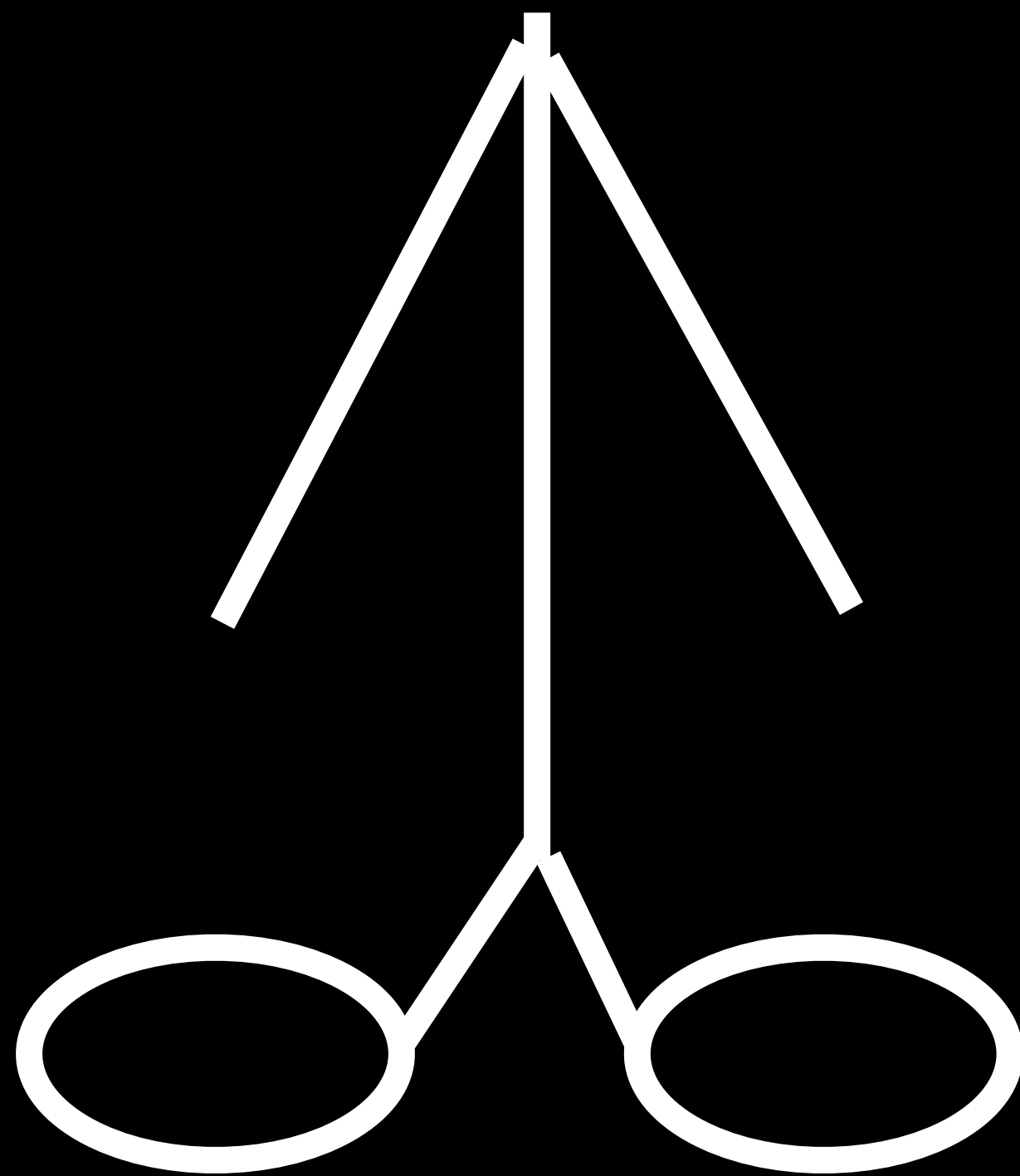
Today's Student



Today's Student



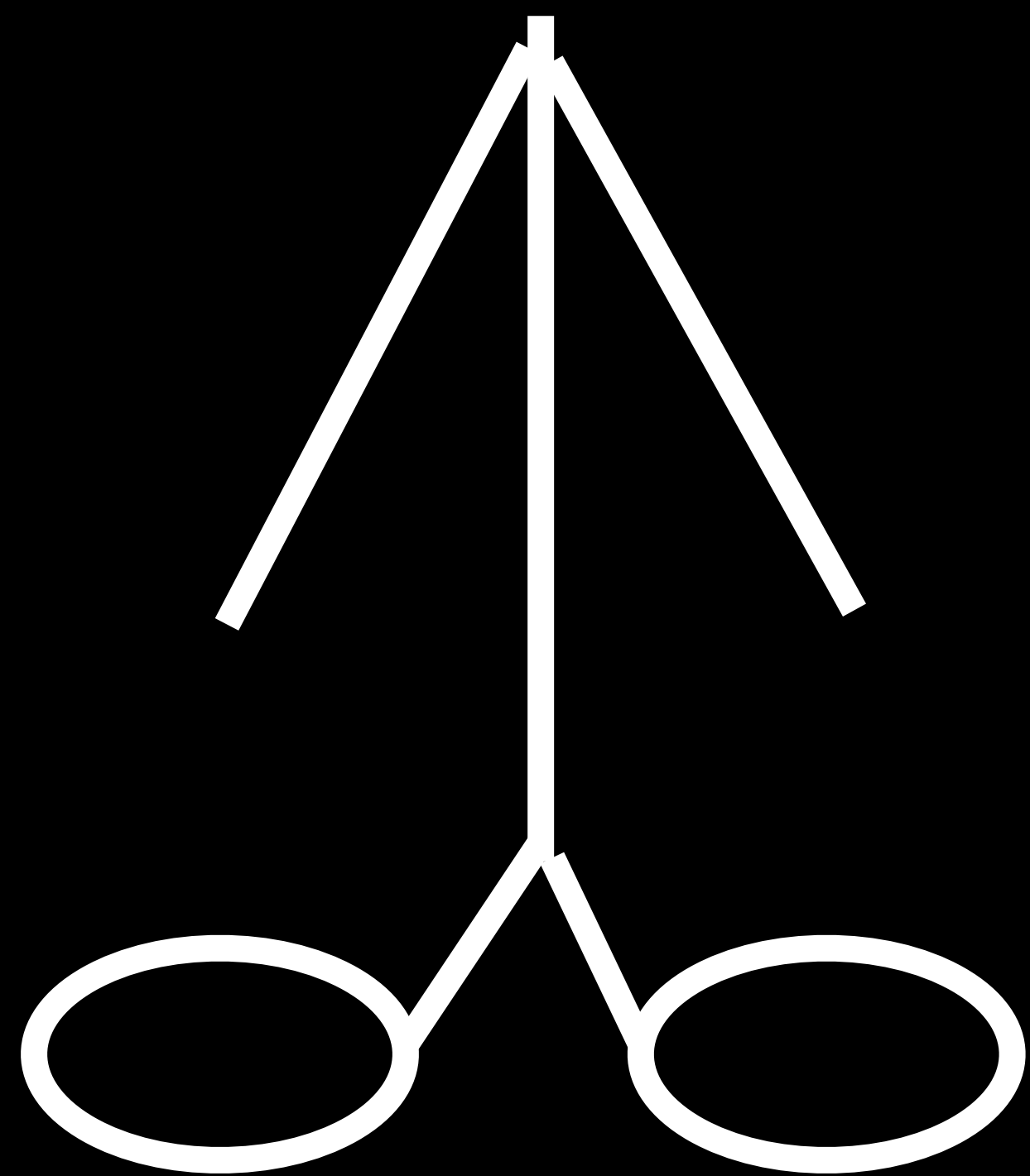
Digital  
Natives



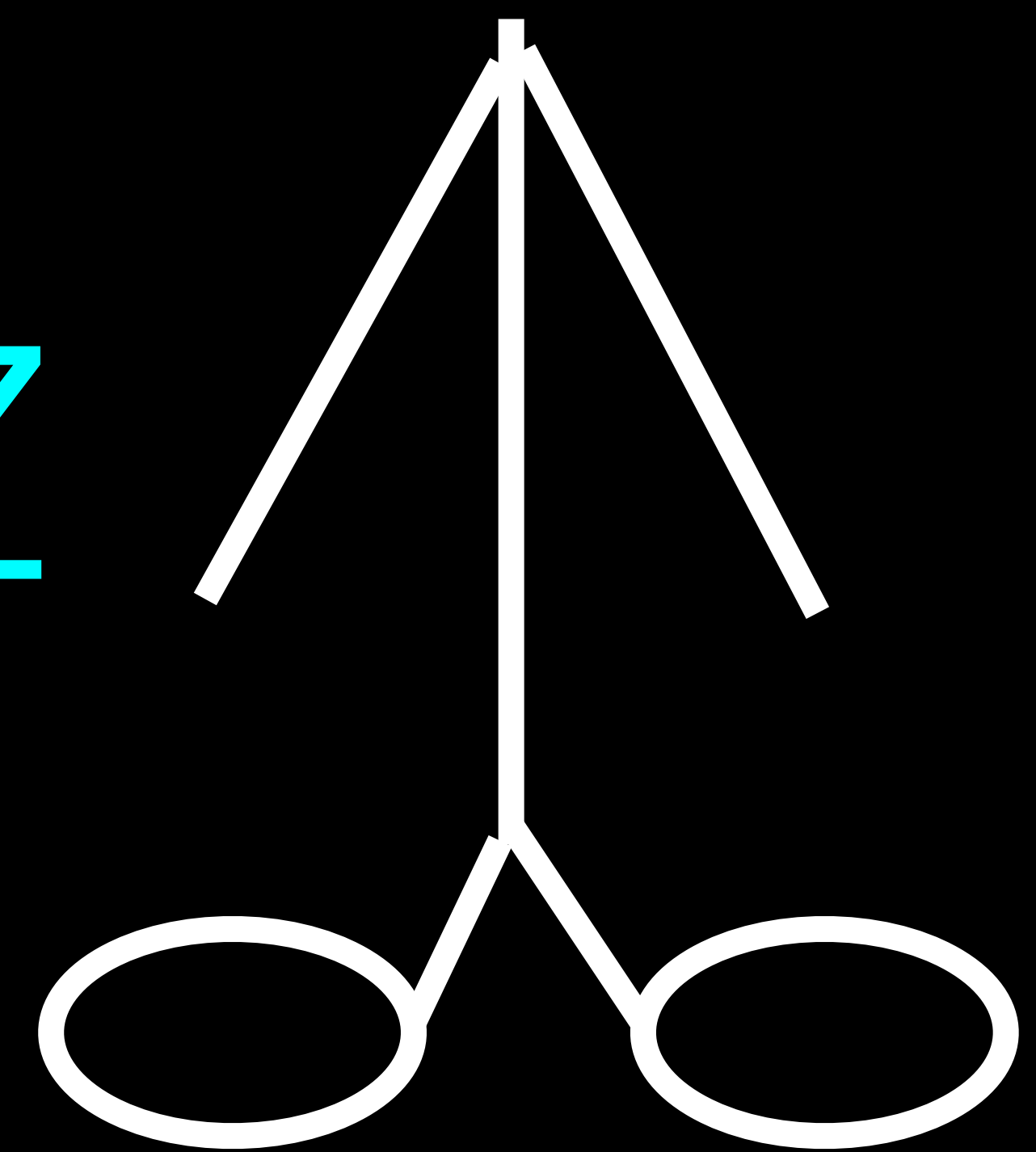
Today's Student



Digital  
Natives



Generation Z



Today's Student



# Motivation



# Motivation



Internal



External



# Motivation



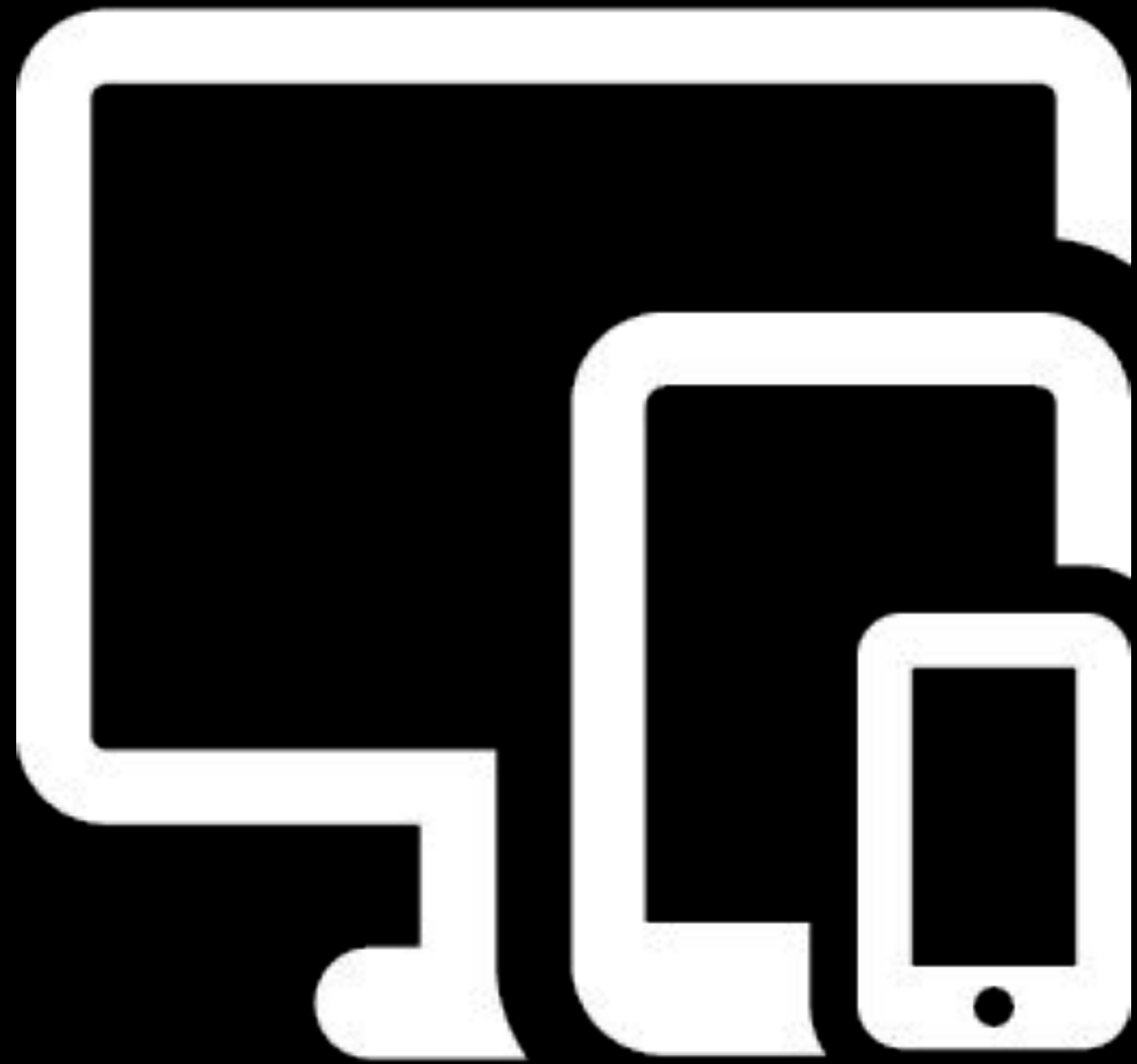
Good



Evil



# Why Are Schools Changing?





Start

make it stick



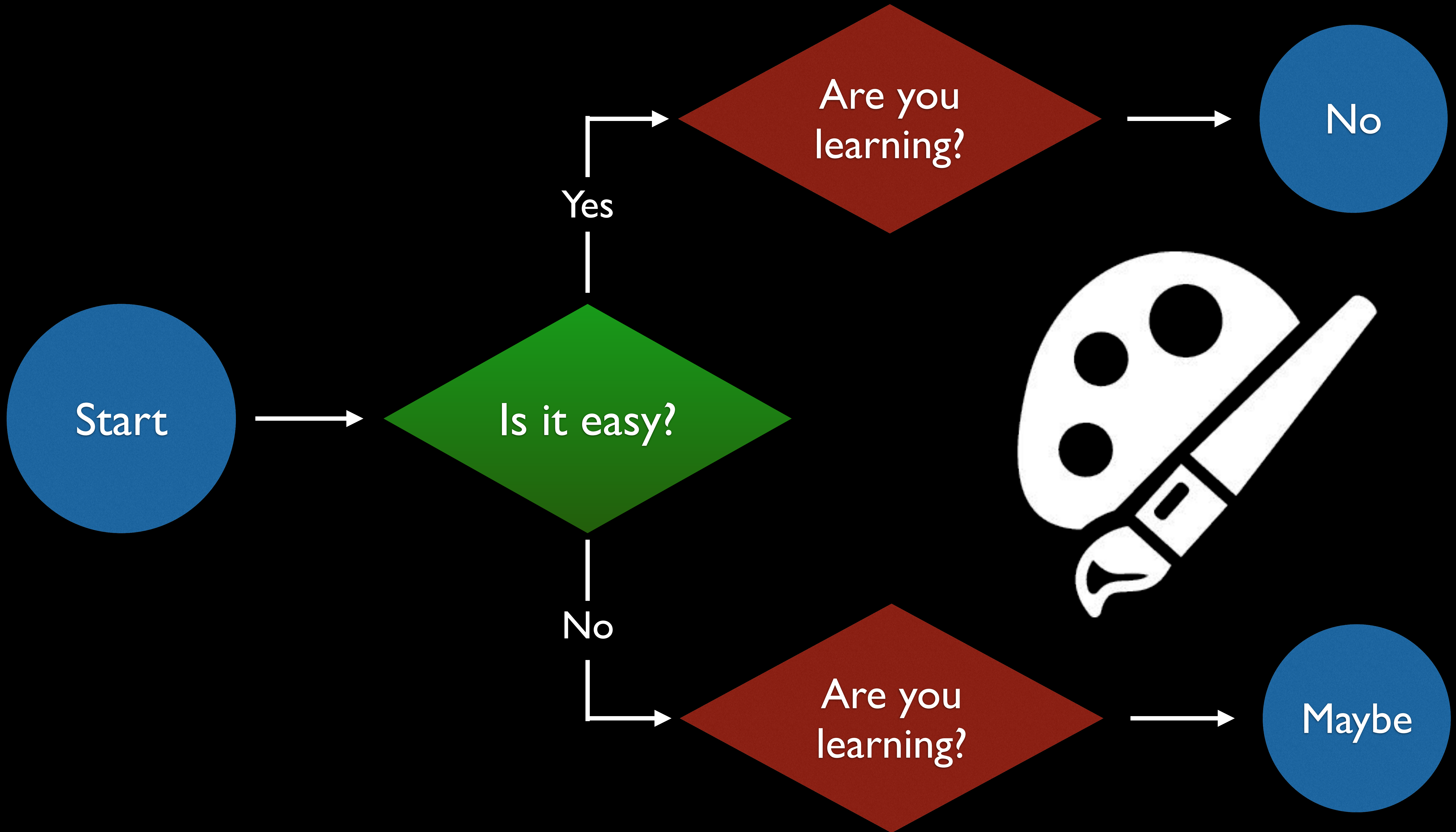
*The Science of Successful Learning*

Peter C. Brown

Henry L. Roediger III

Mark A. McDaniel



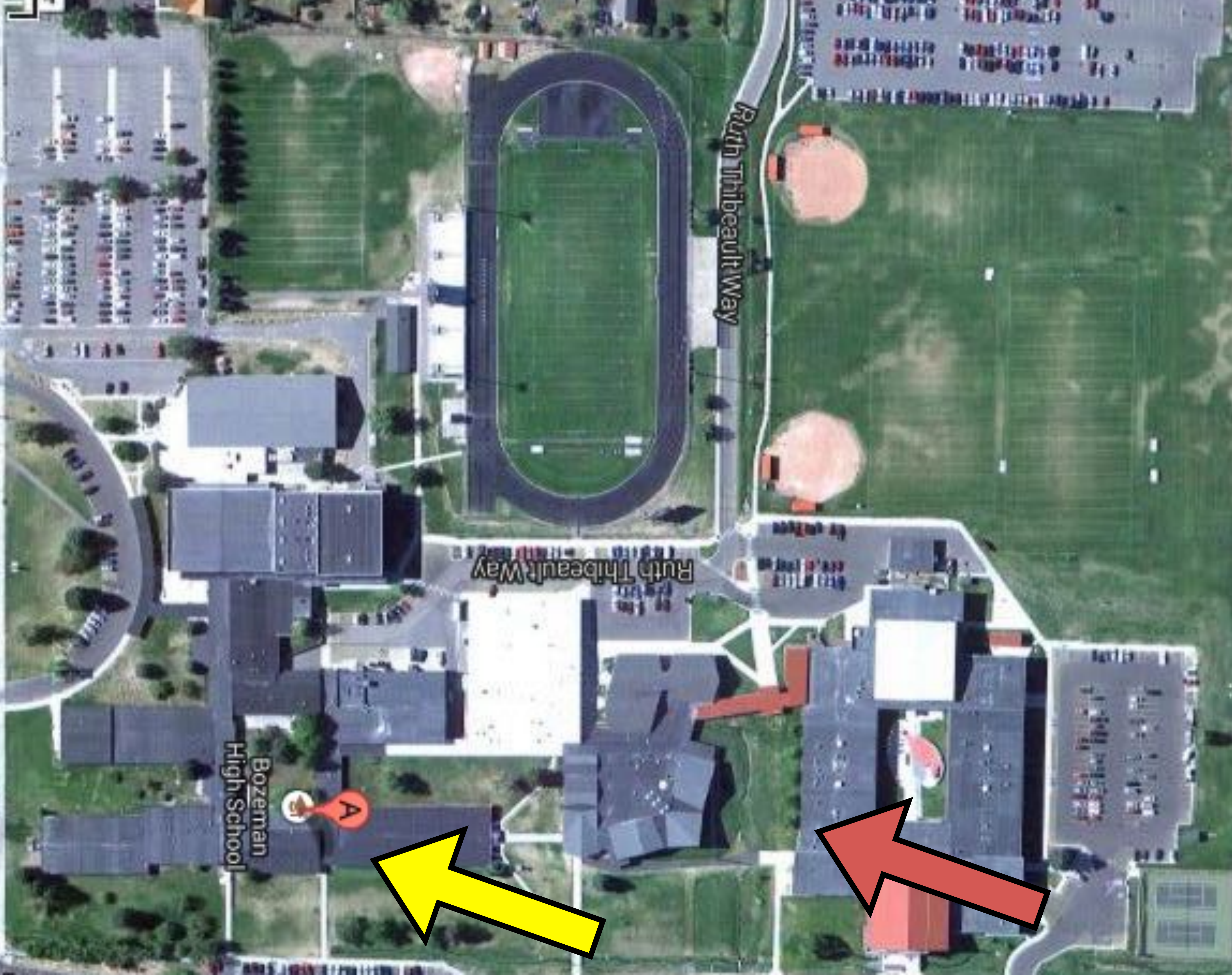




**p l a y**

Simon Says





Real World Via Mosaic

gy

Oct 17-21, 1994.)

Web" and interact with the real world. An  
ctrical engineers collaborated on the project, designing  
a pneumatic system. By clicking on an ISMAP control  
tically or horizontally in order to obtain a desired  
owing users to direct short bursts of compressed air onto  
cavate" regions within the environment by positioning  
cleared region. This paper describes the system in  
asures, user authentication, and interface design. We see  
tions.

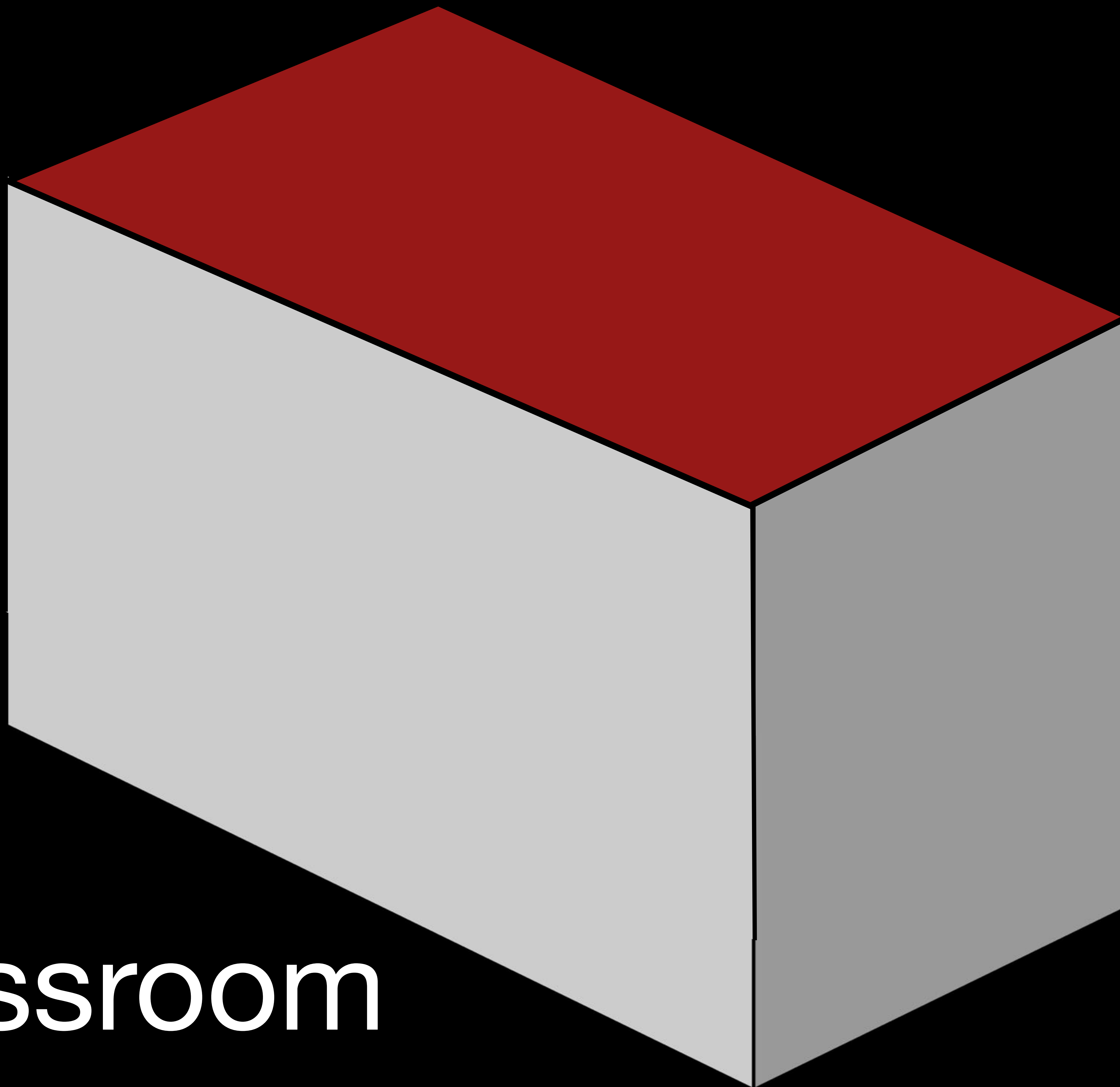
ans all major platforms. Thousands of sites have been set up  
a teleoperated robot, thus allowing users to reach beyond

ould be low in cost (we had an extremely limited budget). It  
zabiate robots for production. Thus our experience with

Ph 2009-04-13 5:17:57

ernnet





Your Classroom



# our Classroom





# Good Design





# Good Design





# Good Design





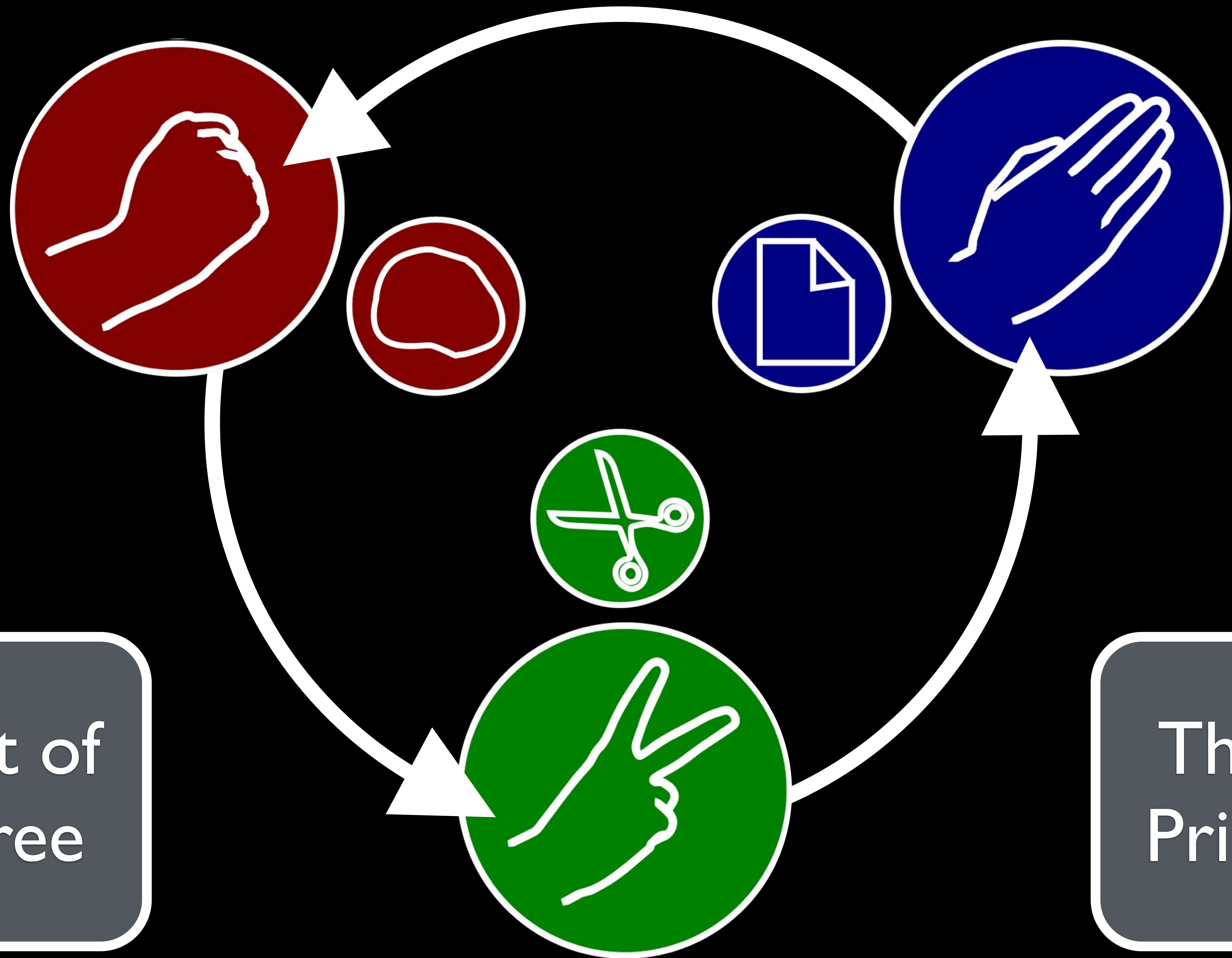




“People who do not  
break things first  
will never learn to  
create anything.”

- Filipino Proverb



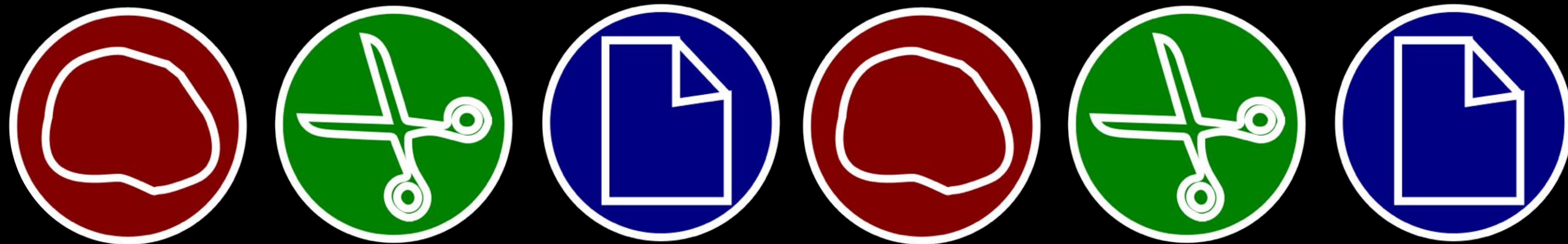


Best of  
Three

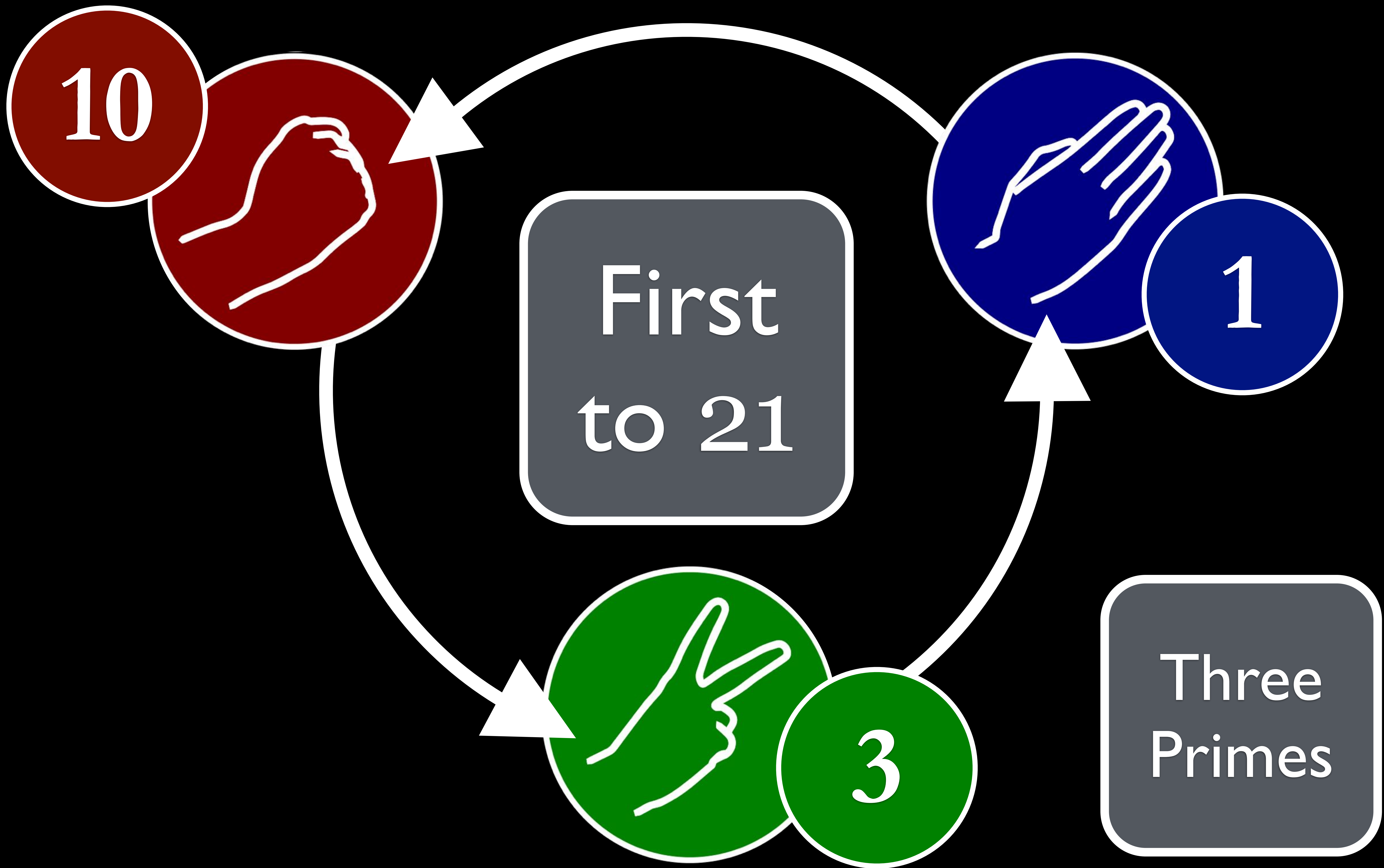
Three  
Primes



# Andersen Rules











The Leap

William Cimillo



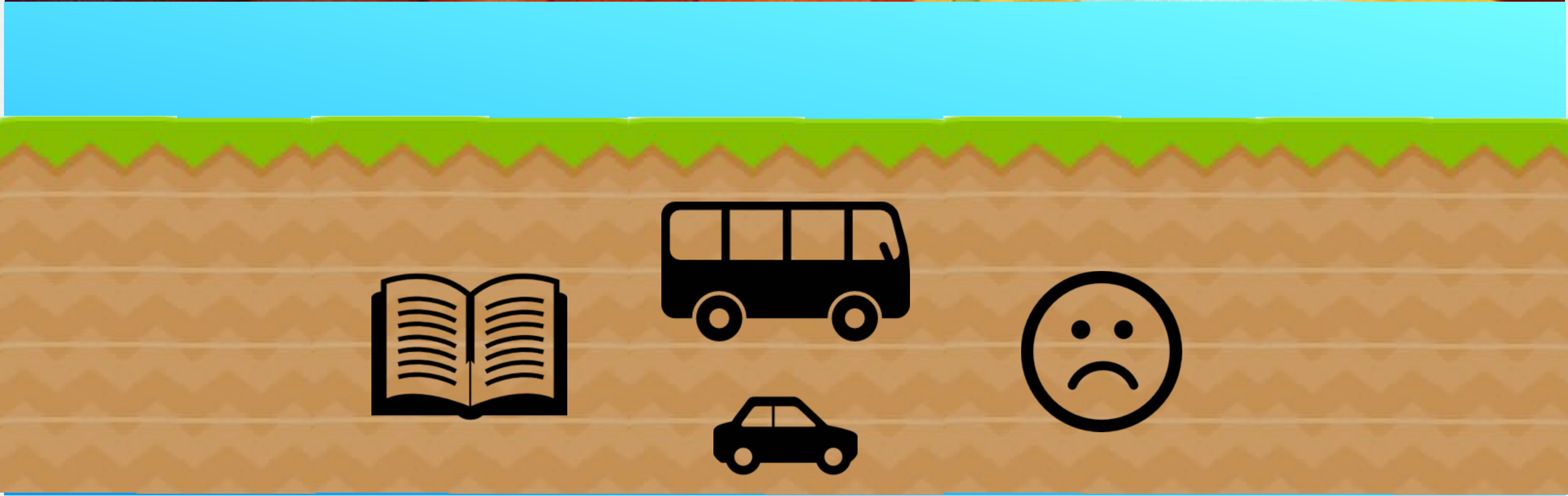
Play  
→







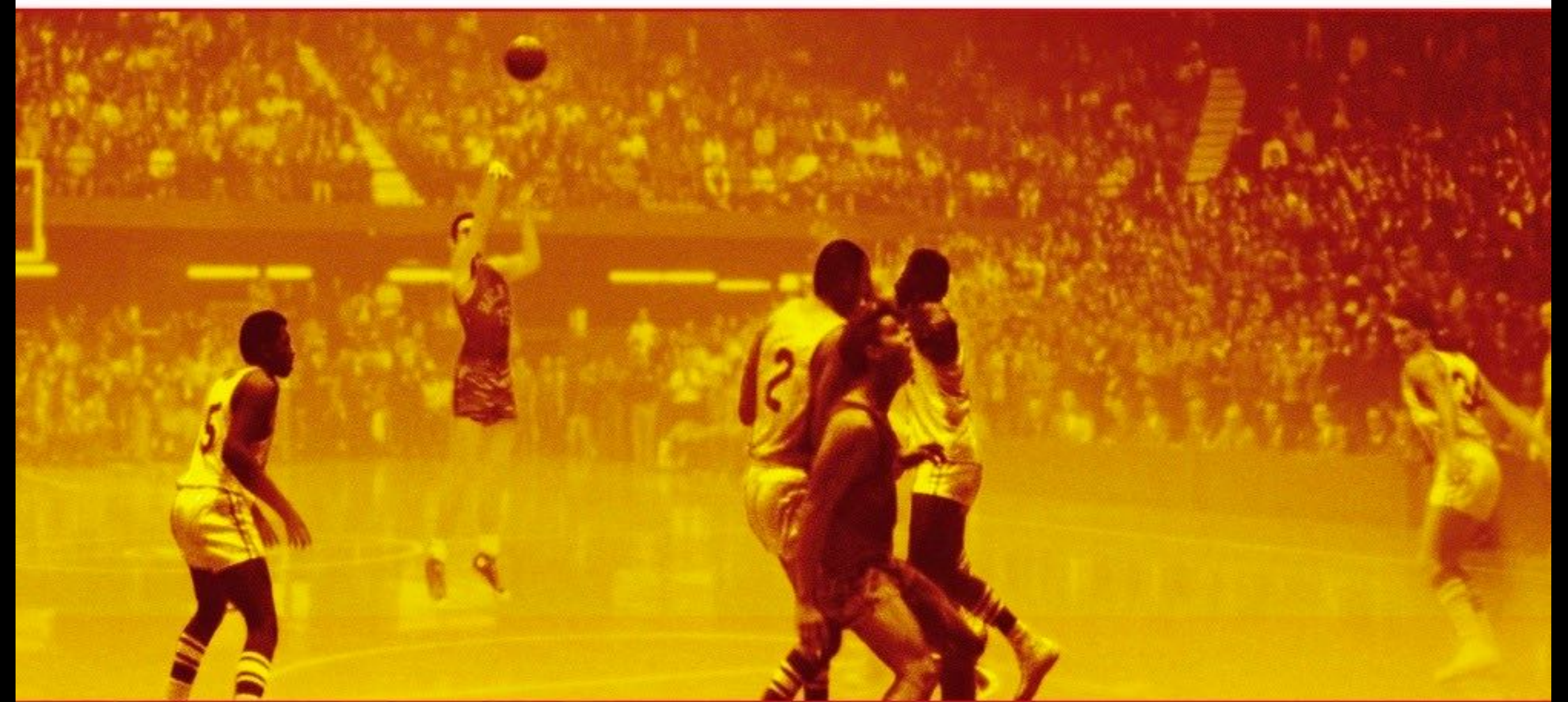
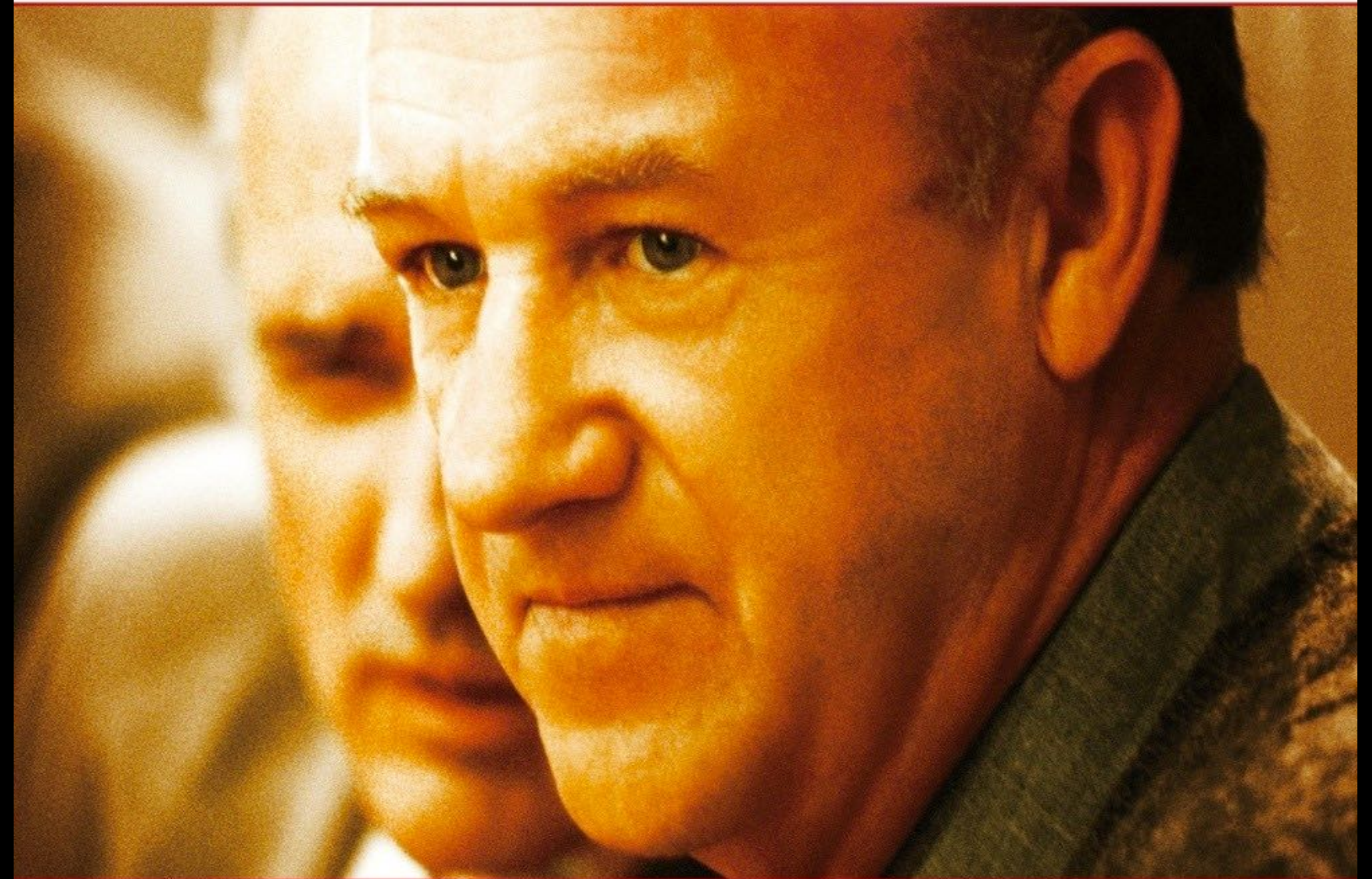
The Leap





Your favorite  
sports movie

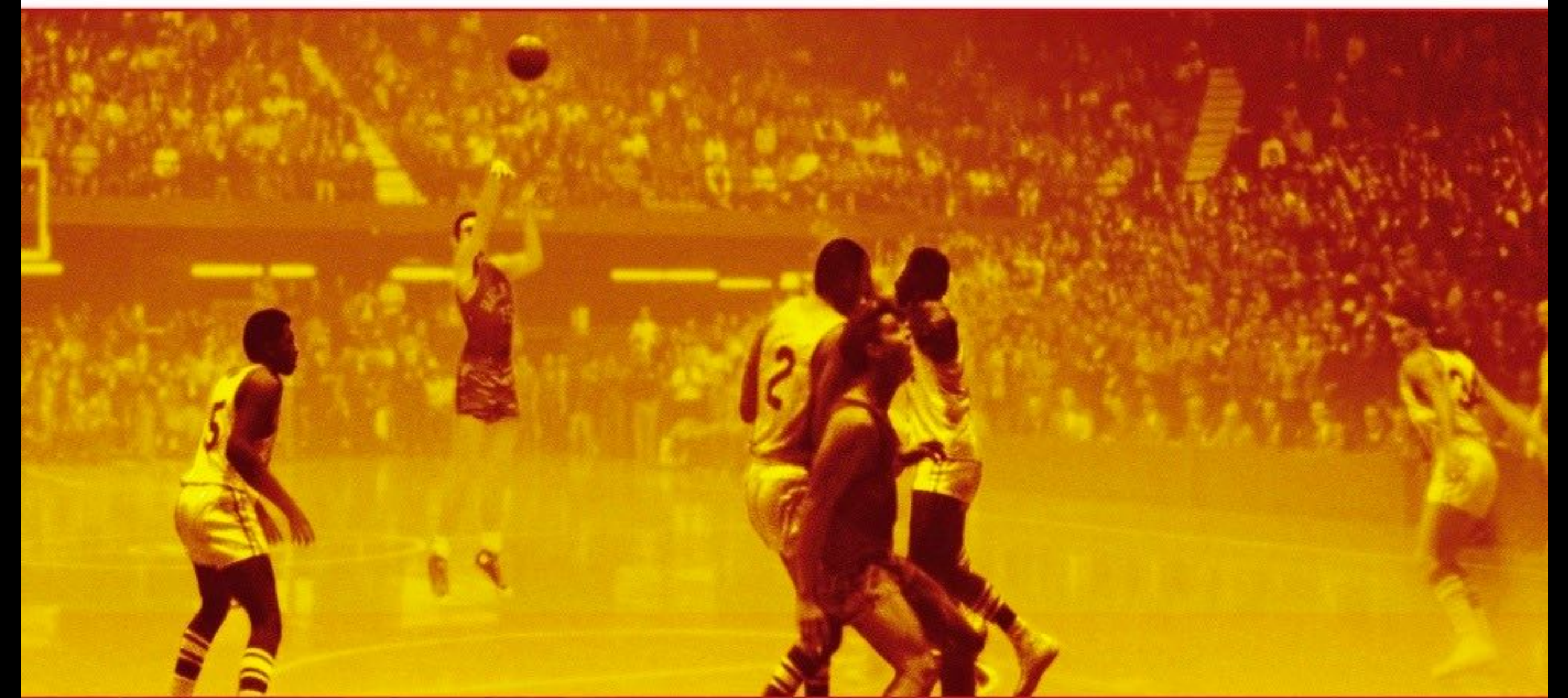
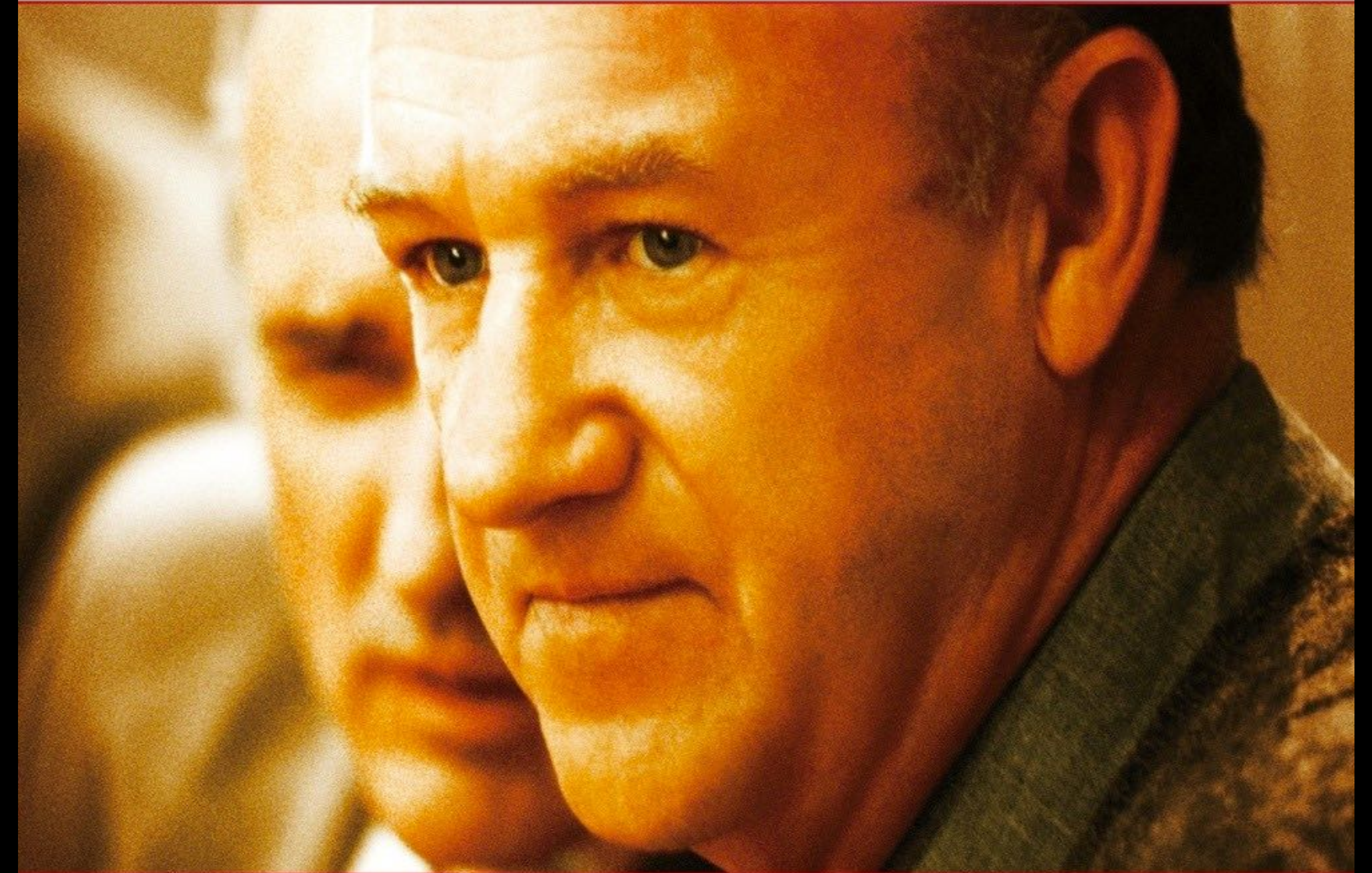
# HOOSIERS





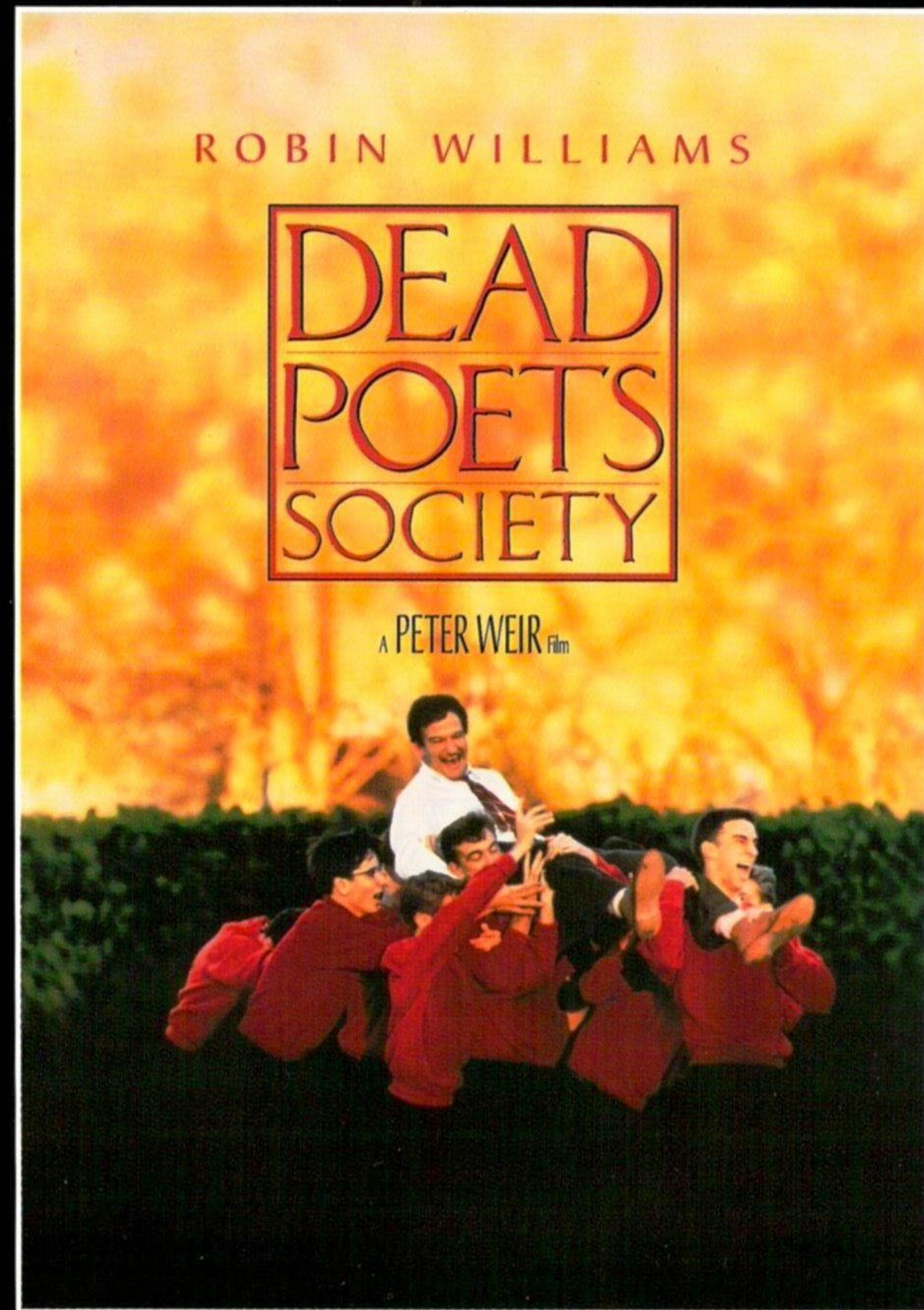


# HOOSIERS





Your favorite  
school movie











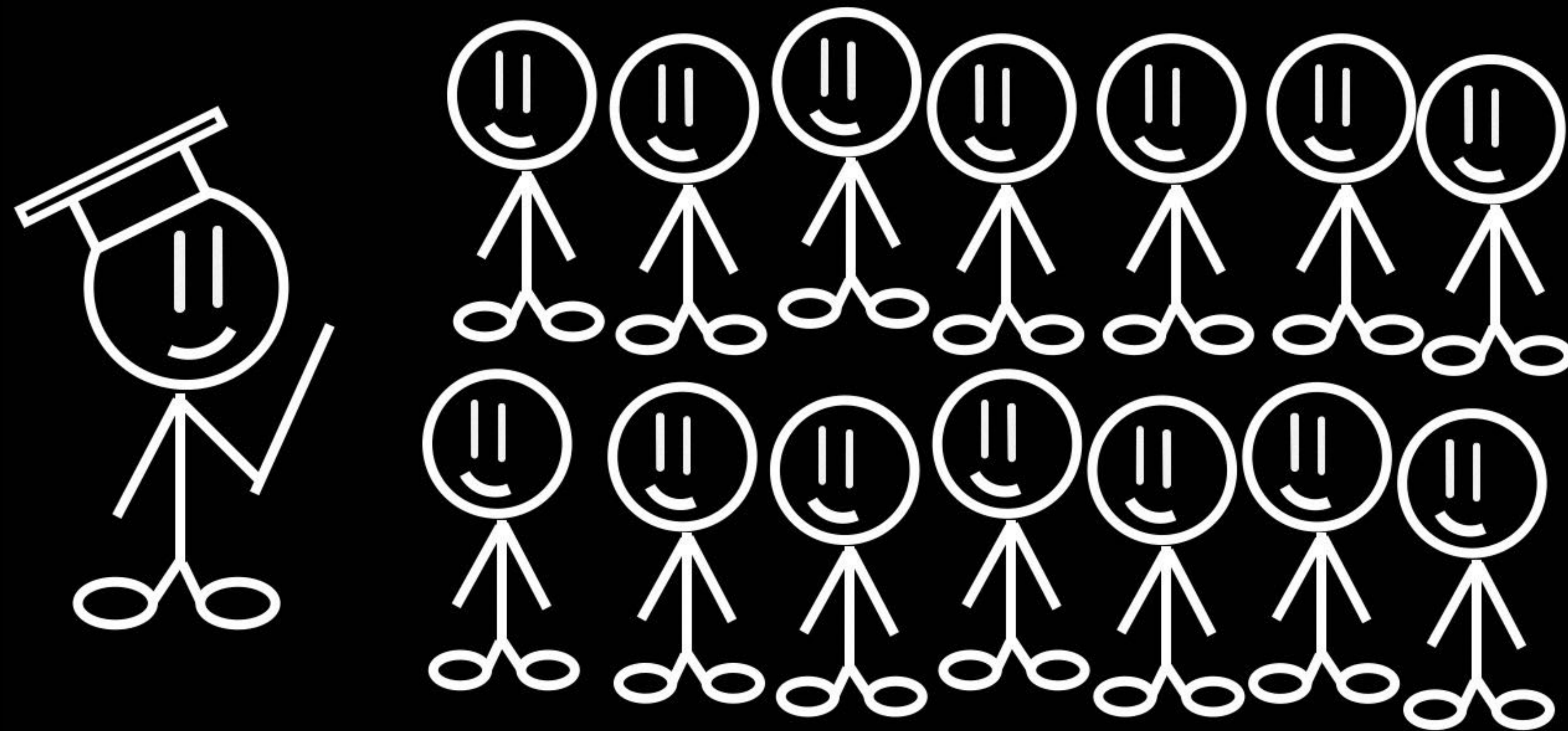
**I**ove

Discipline

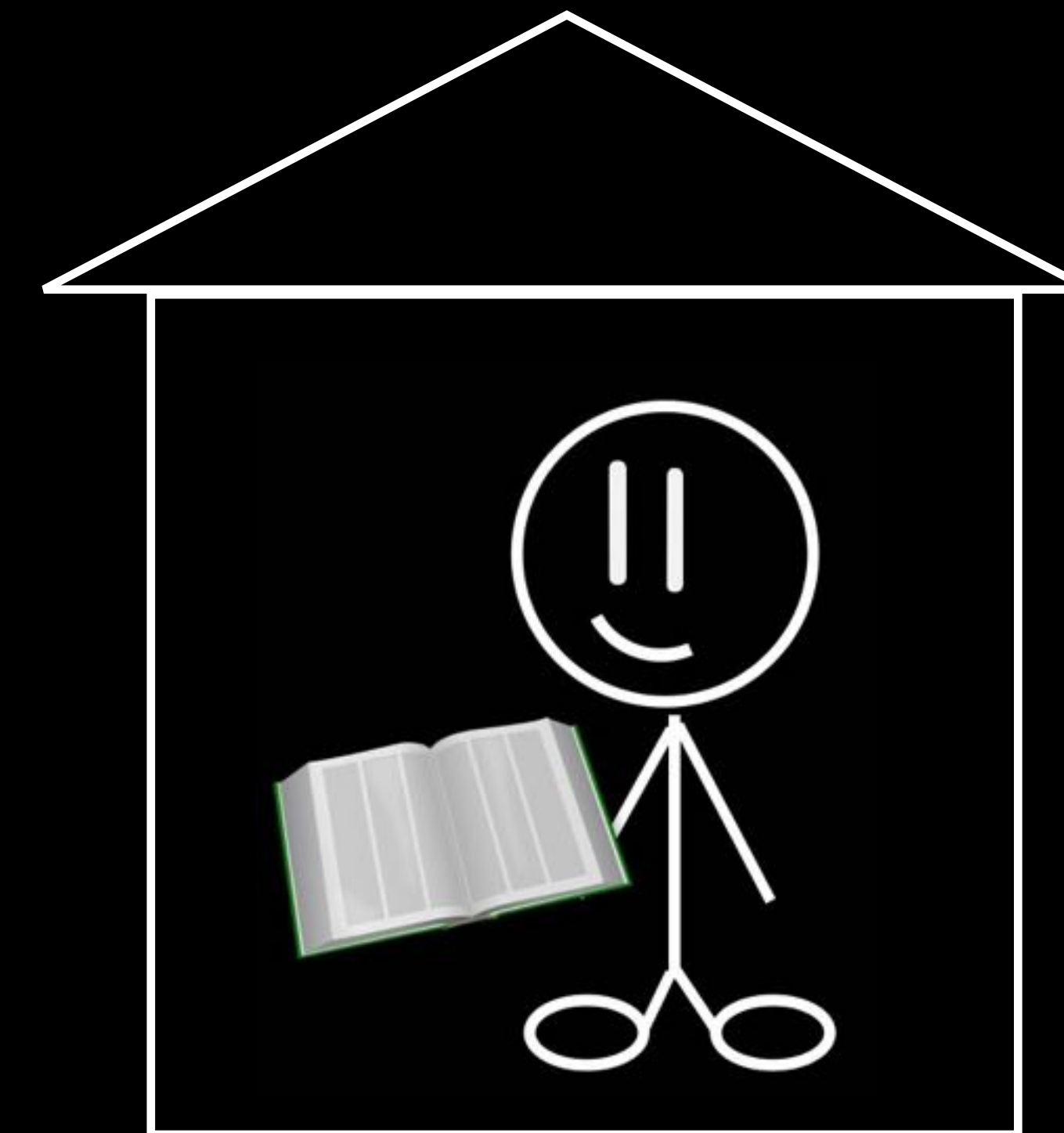
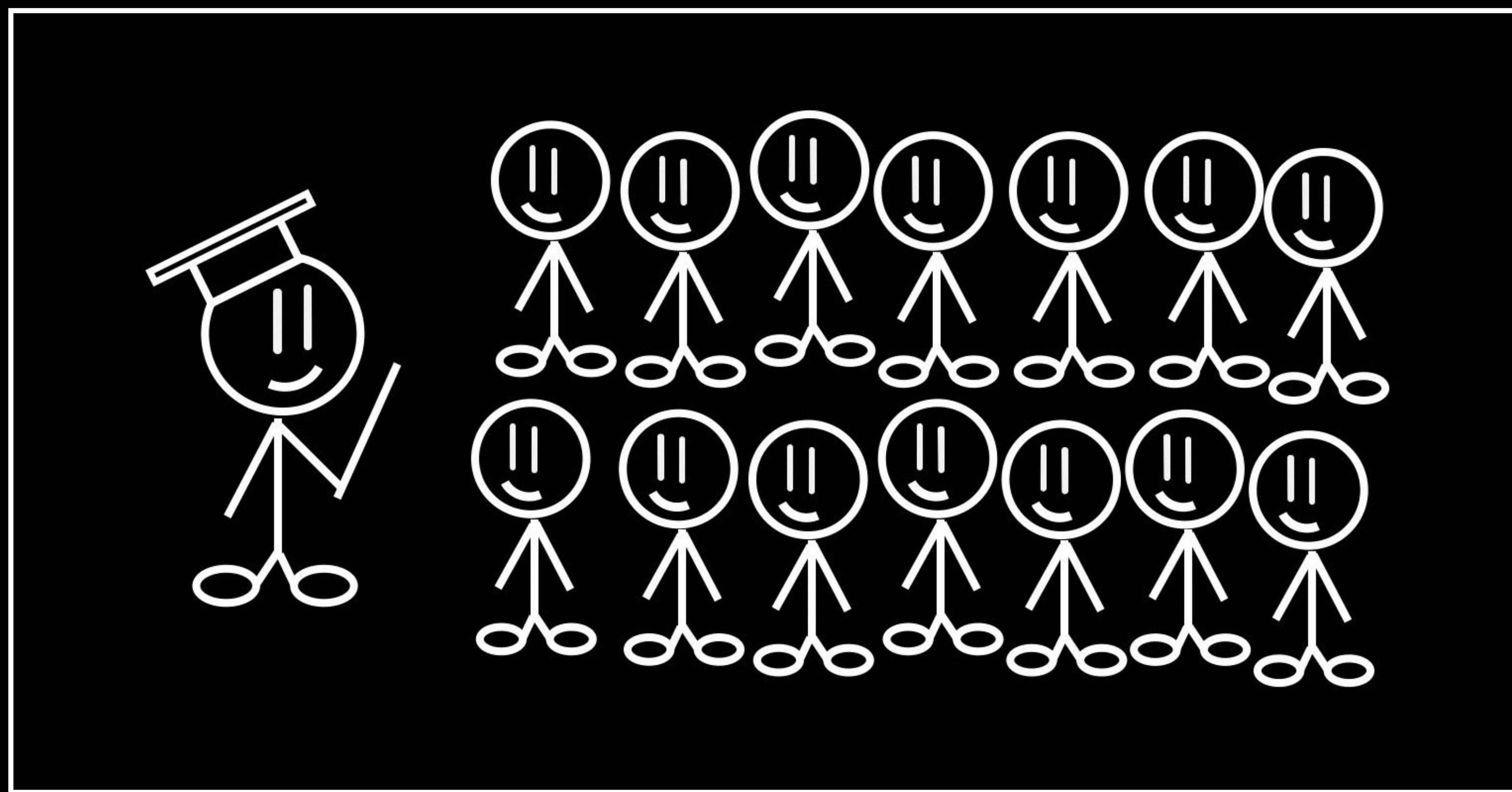




**YOU** are the most important  
resource in your classroom





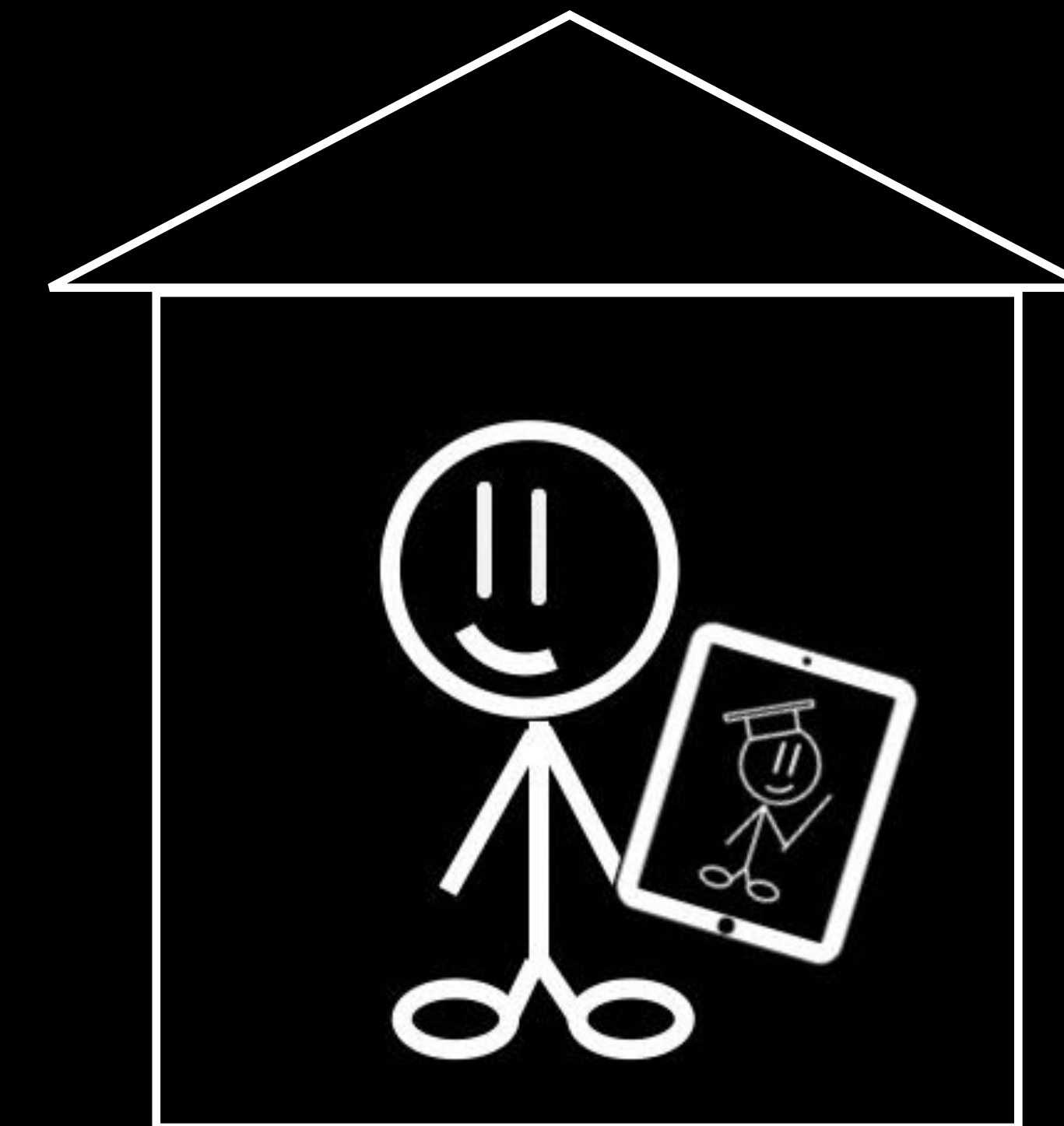
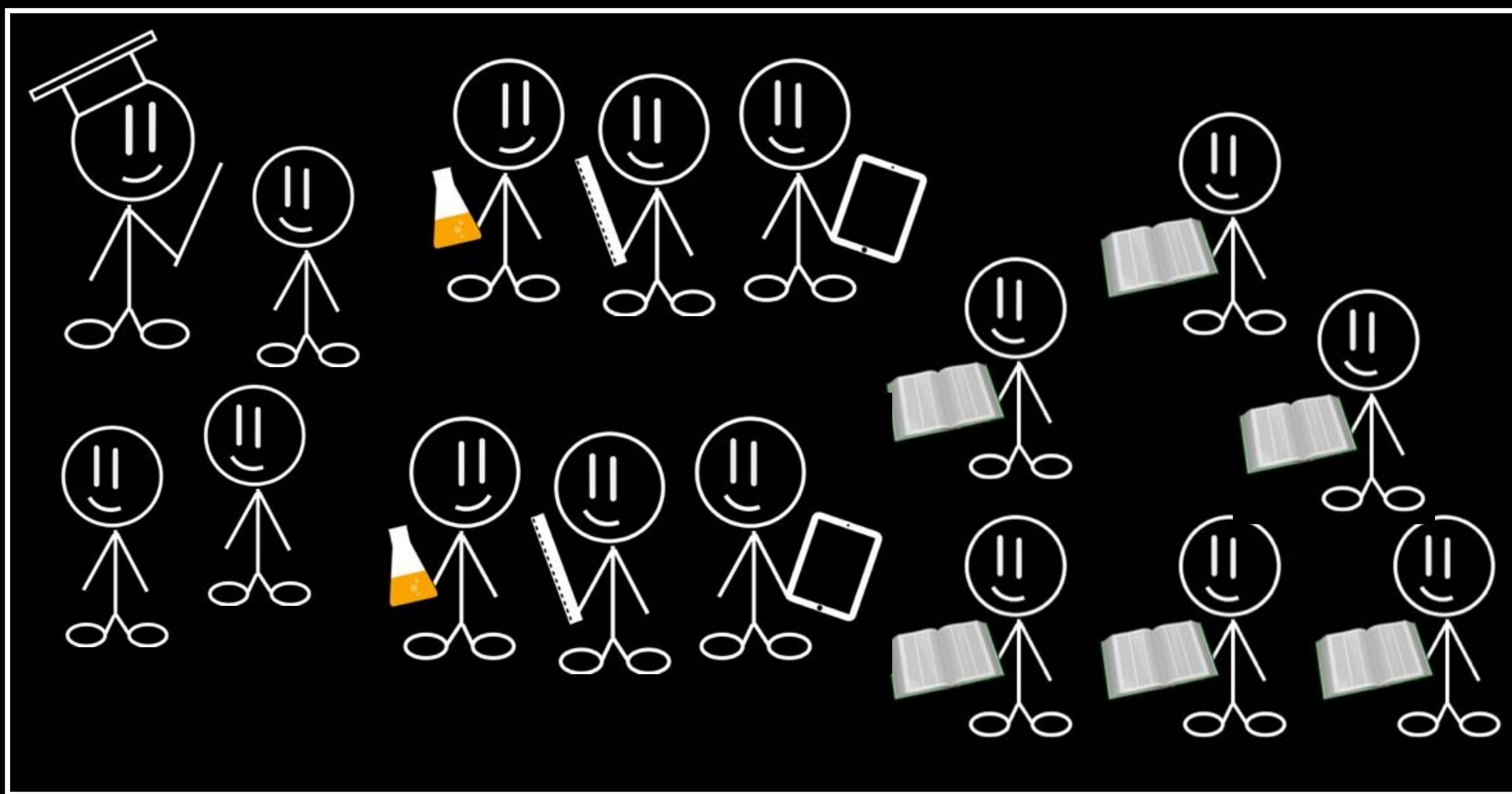


Flipped

Mastery

Blended



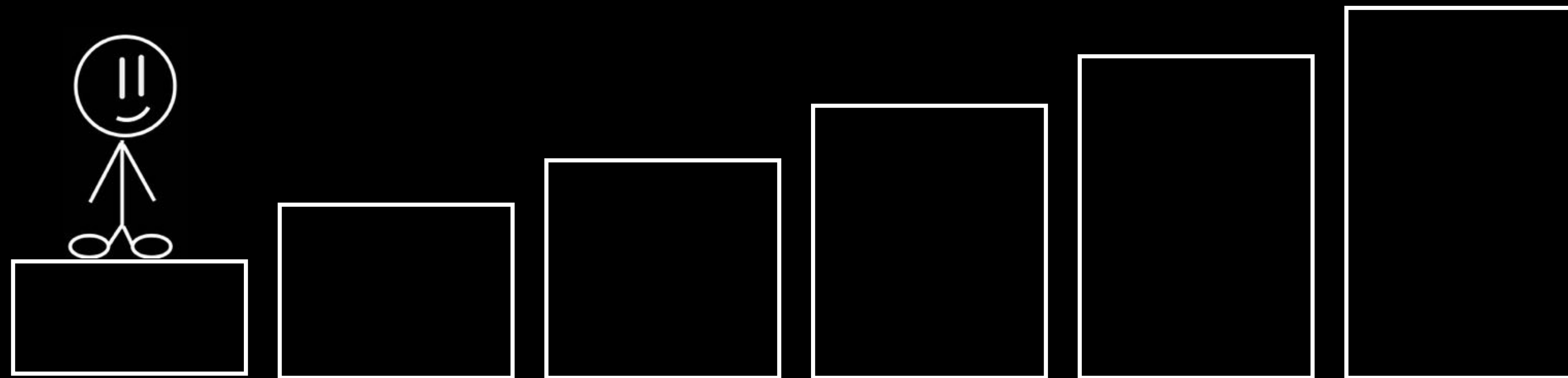


Flipped

Mastery

Blended





Flipped

Mastery

Blended





Classroom



Online



Flipped

Mastery

Blended



The image features three large, solid-colored circles arranged horizontally against a black background. The leftmost circle is blue and contains the word 'Flipped' in white. The middle circle is green and contains the word 'Mastery' in white. The rightmost circle is red and contains the word 'Blended' in white. All circles have a thin white outline.

Flipped

Mastery

Blended







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# How to draw an Owl.

*"A fun and creative guide for beginners"*

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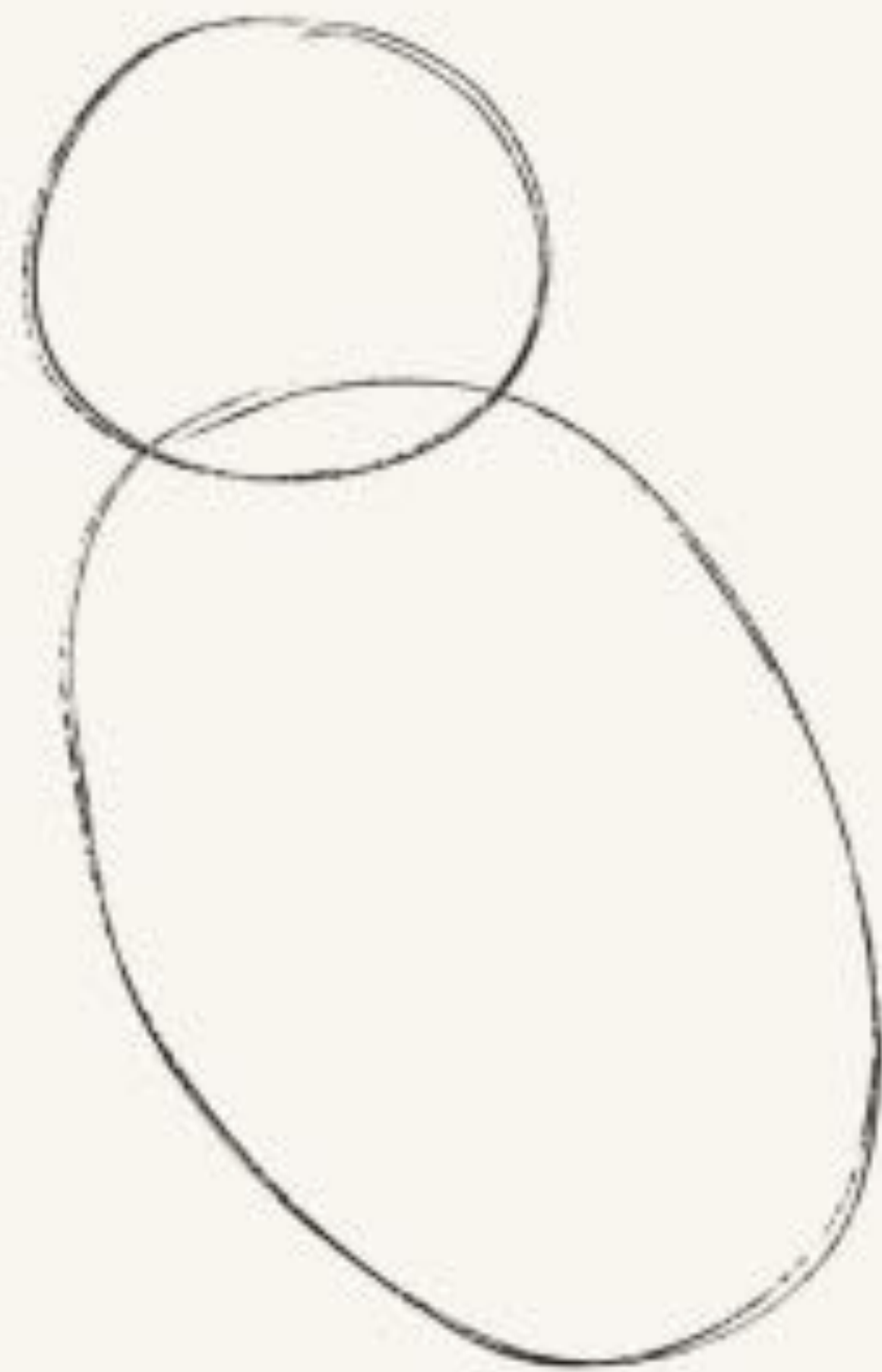


Fig 1. Draw two circles

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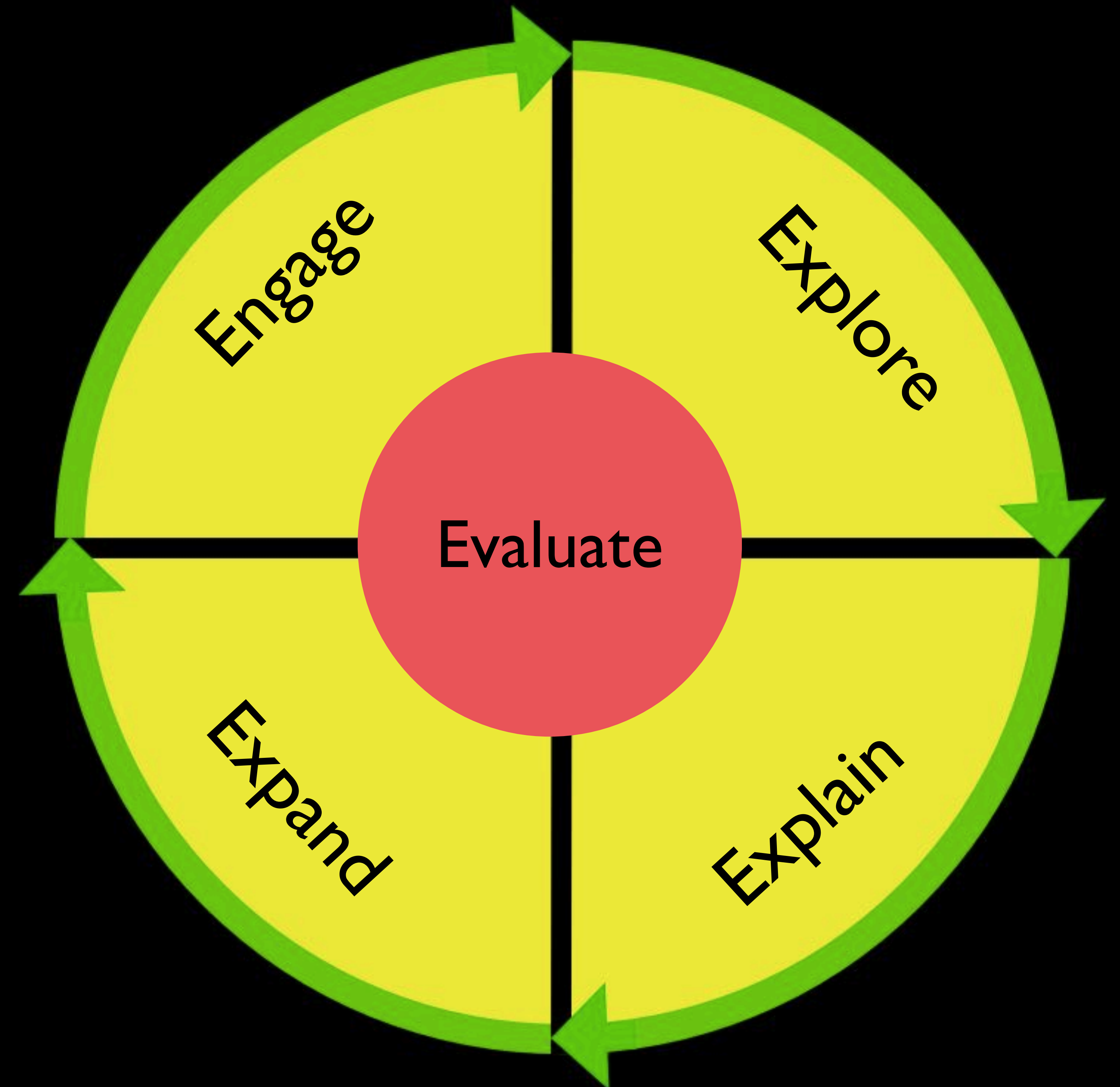
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# Blended Learning

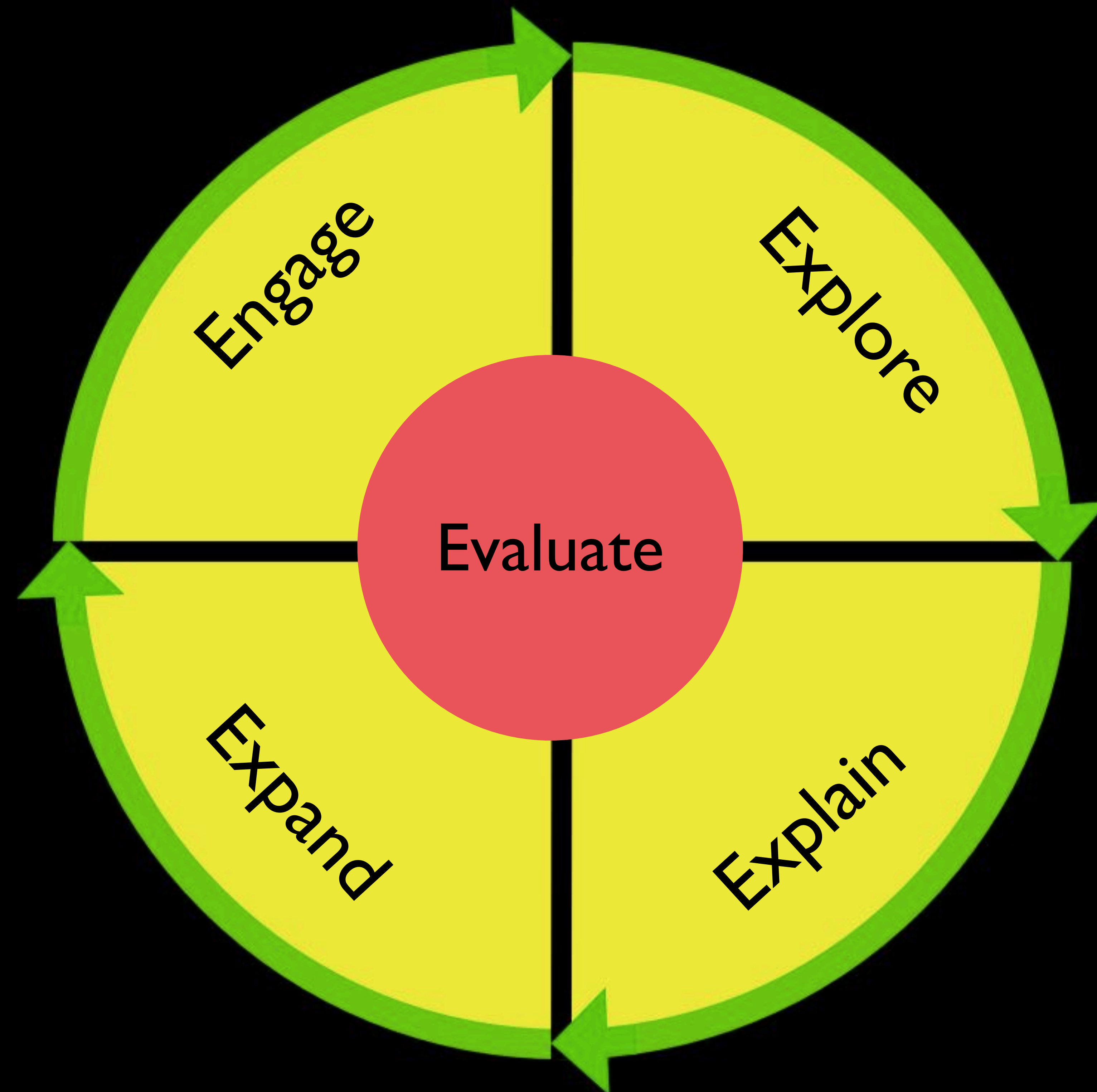


# Learning Cycle





# Blended Learning Cycle







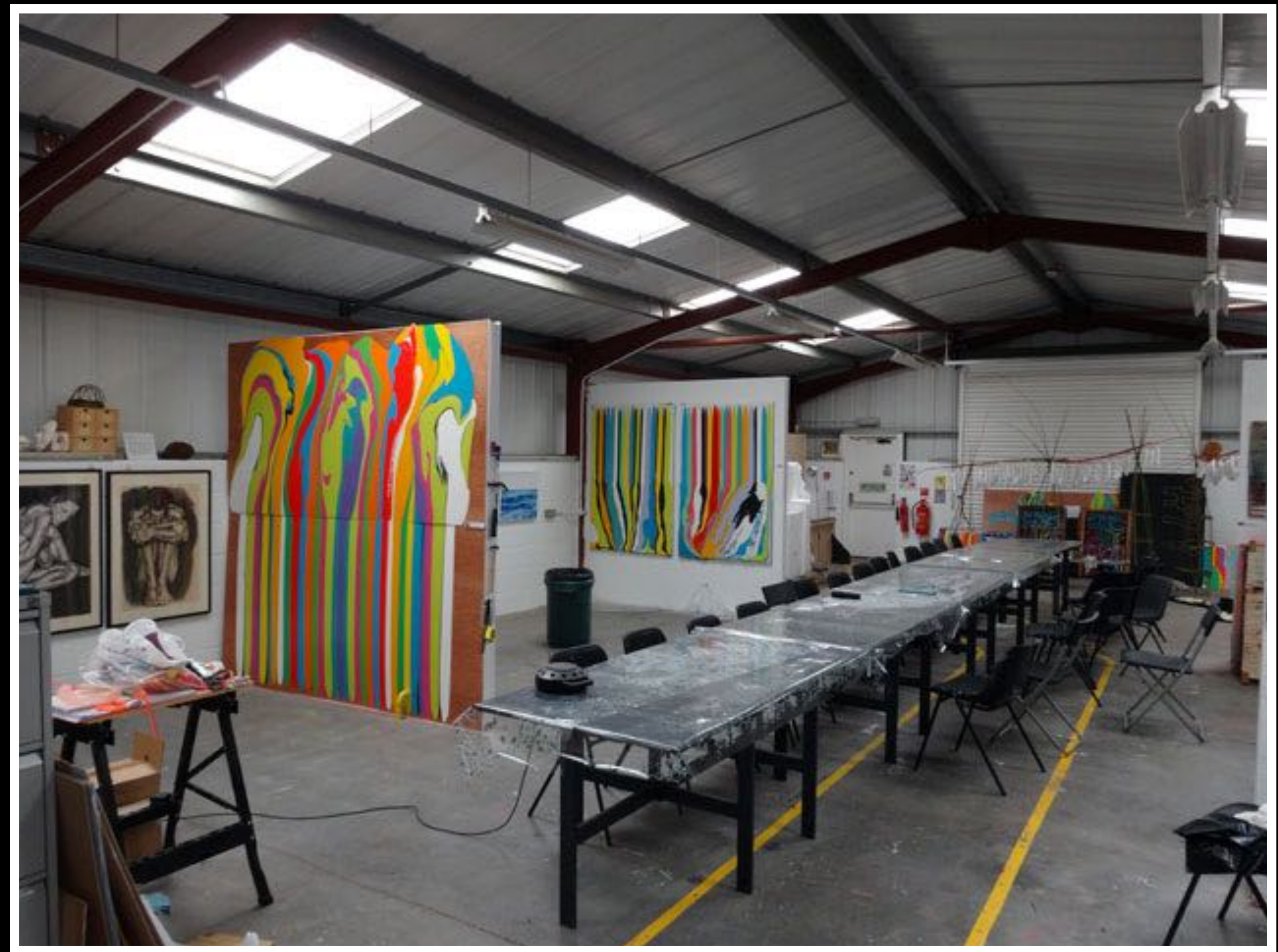


# What Will the School of the Future Look Like?



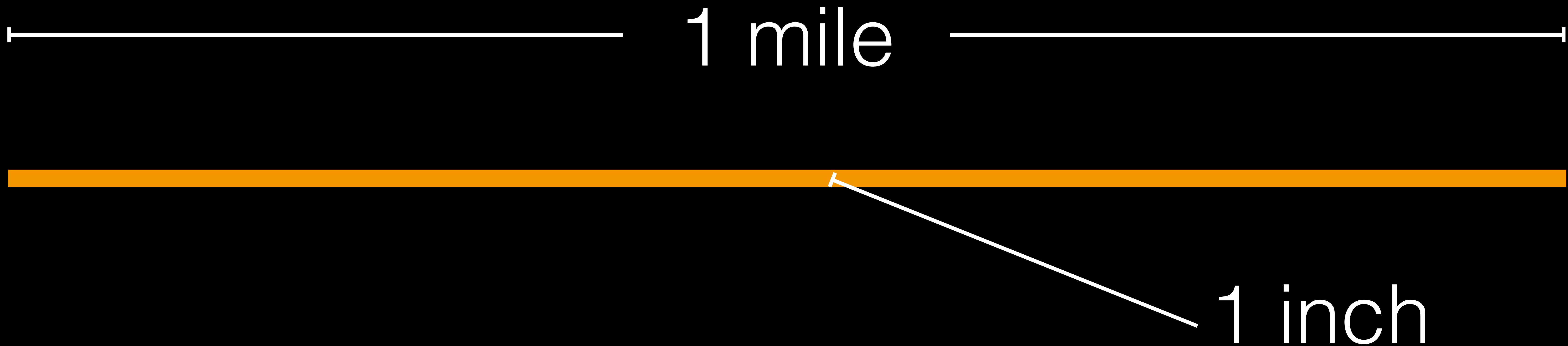


# What Will the School of the Future Look Like?





# The Problem



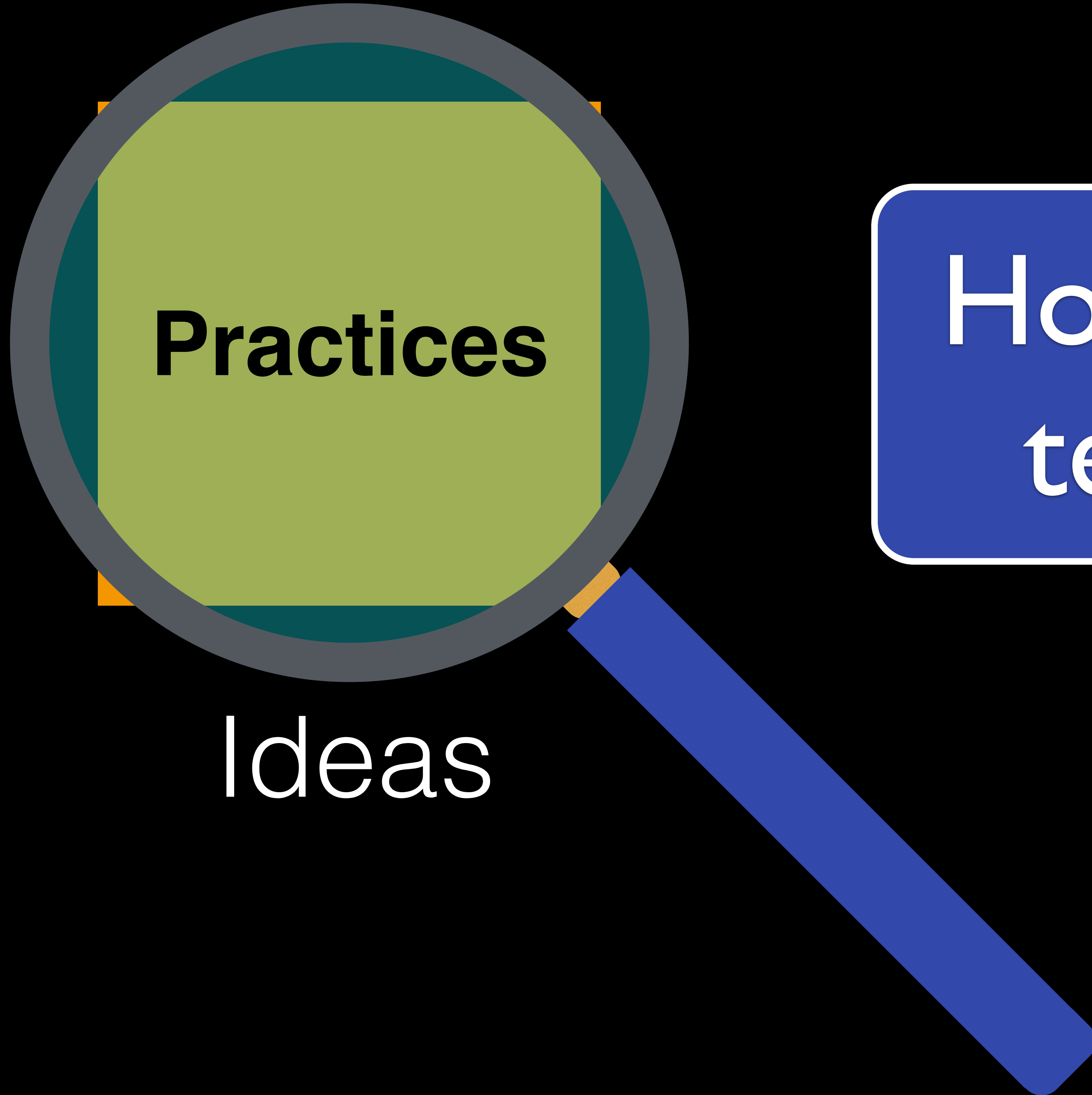


**What we  
teach**

**Practices**

**How we  
teach**

Ideas





What we  
teach

Music

Art

Math

Writing

Science

Students  
are

Musicians

Artists

Mathematicians

Writers

Scientists



**p**ractices





practices Require



Practice



Practice

10,000 Hours



# Practice



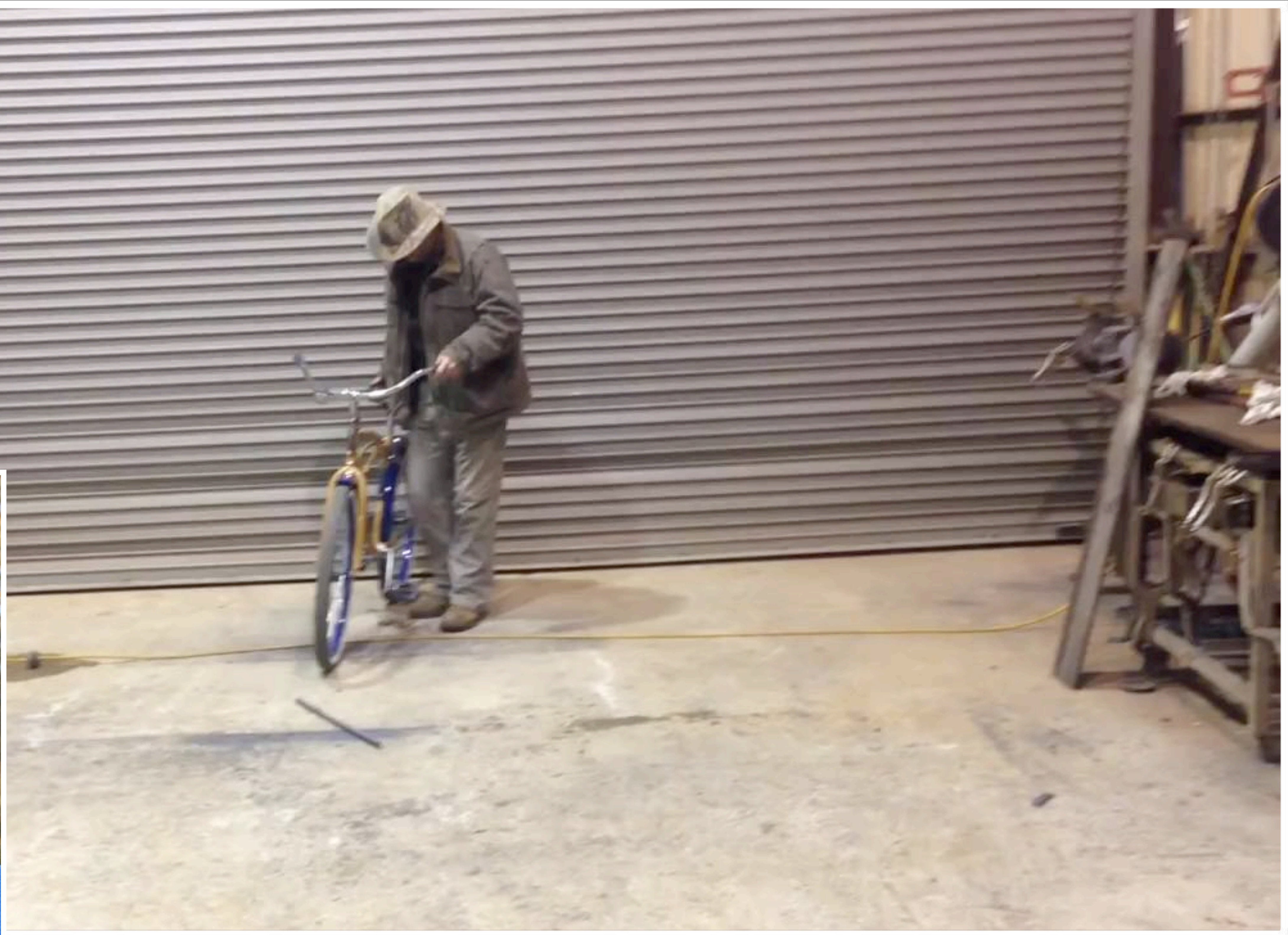
Varied

Spaced

Interleaved



# The Backwards Brain Bicycle



Smarter Every Day



# The Backwards Brain Bicycle



Smarter Every Day



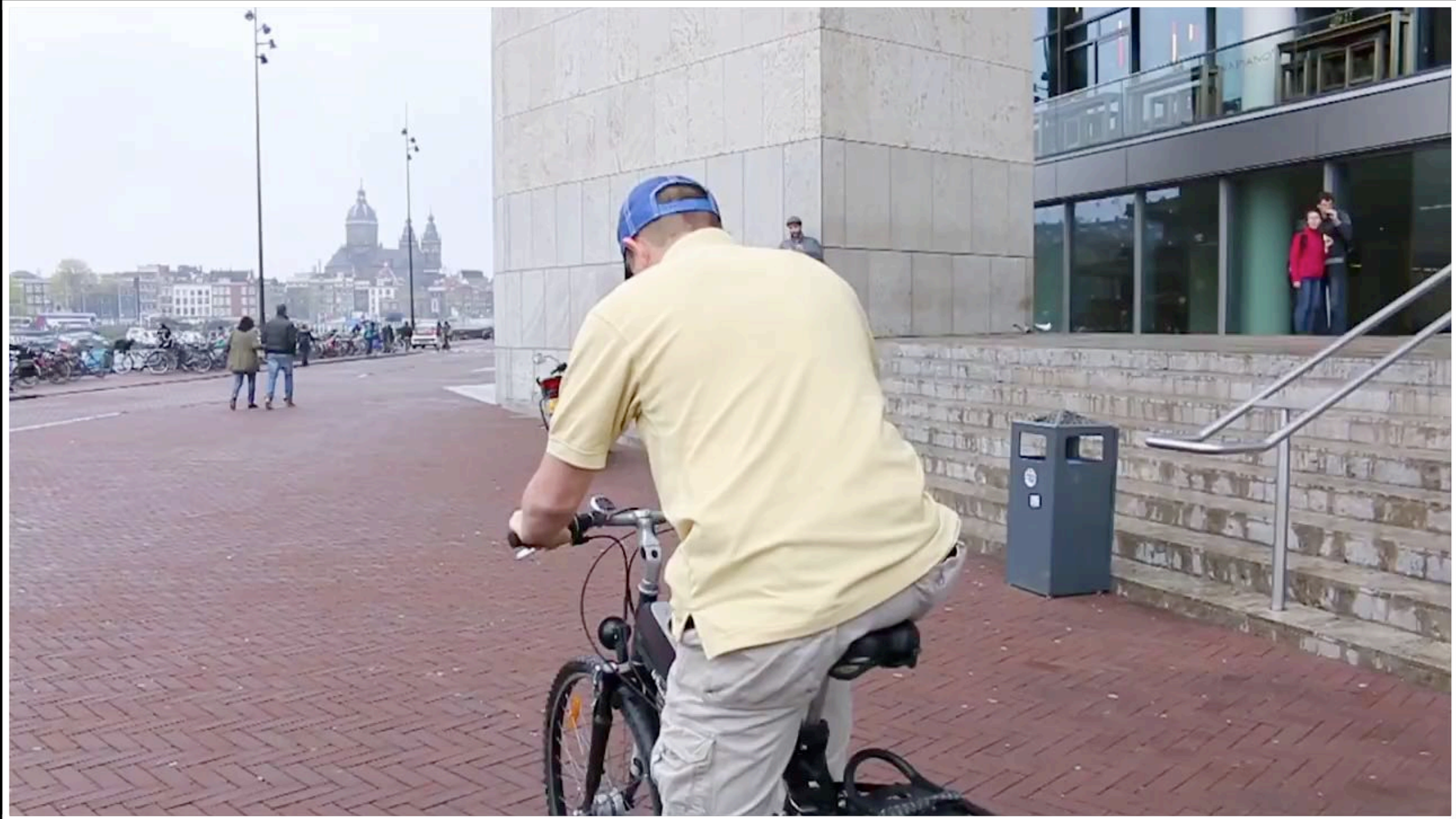
# The Backwards Brain Bicycle



Smarter Every Day

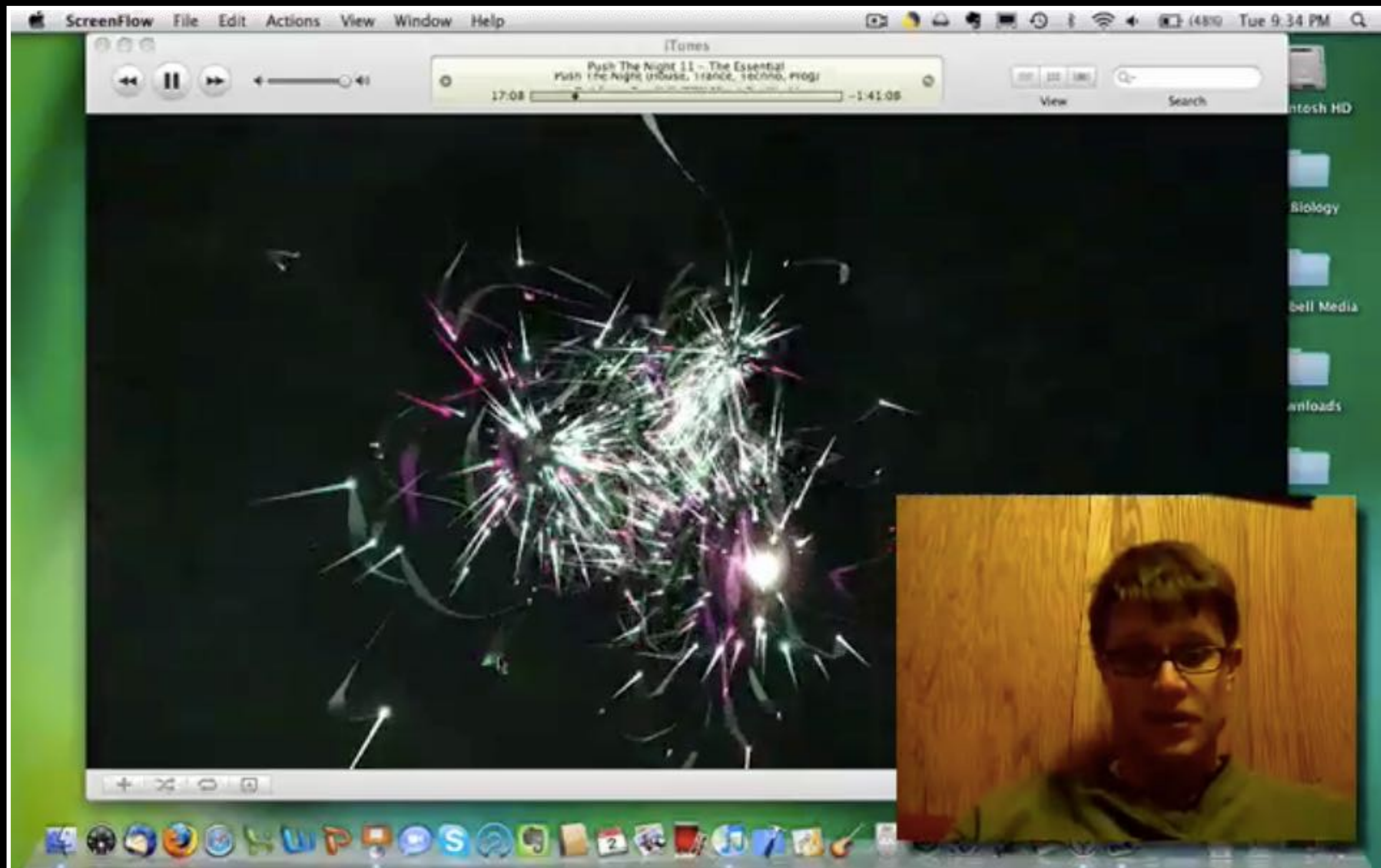


# The Backwards Brain Bicycle

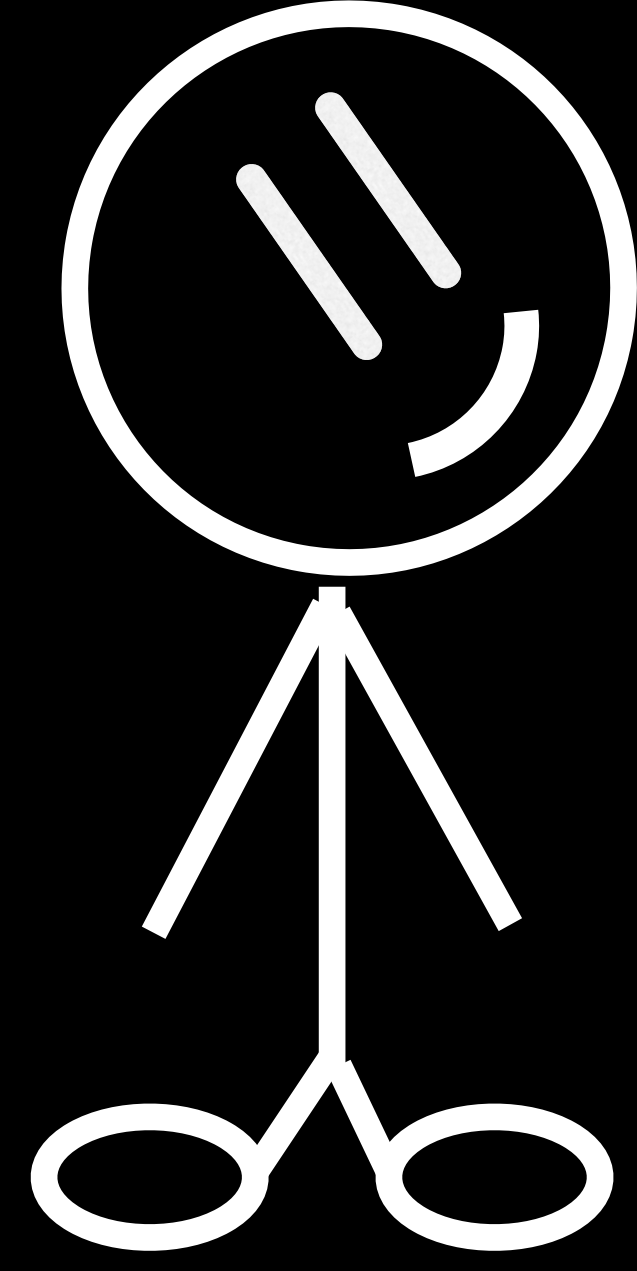
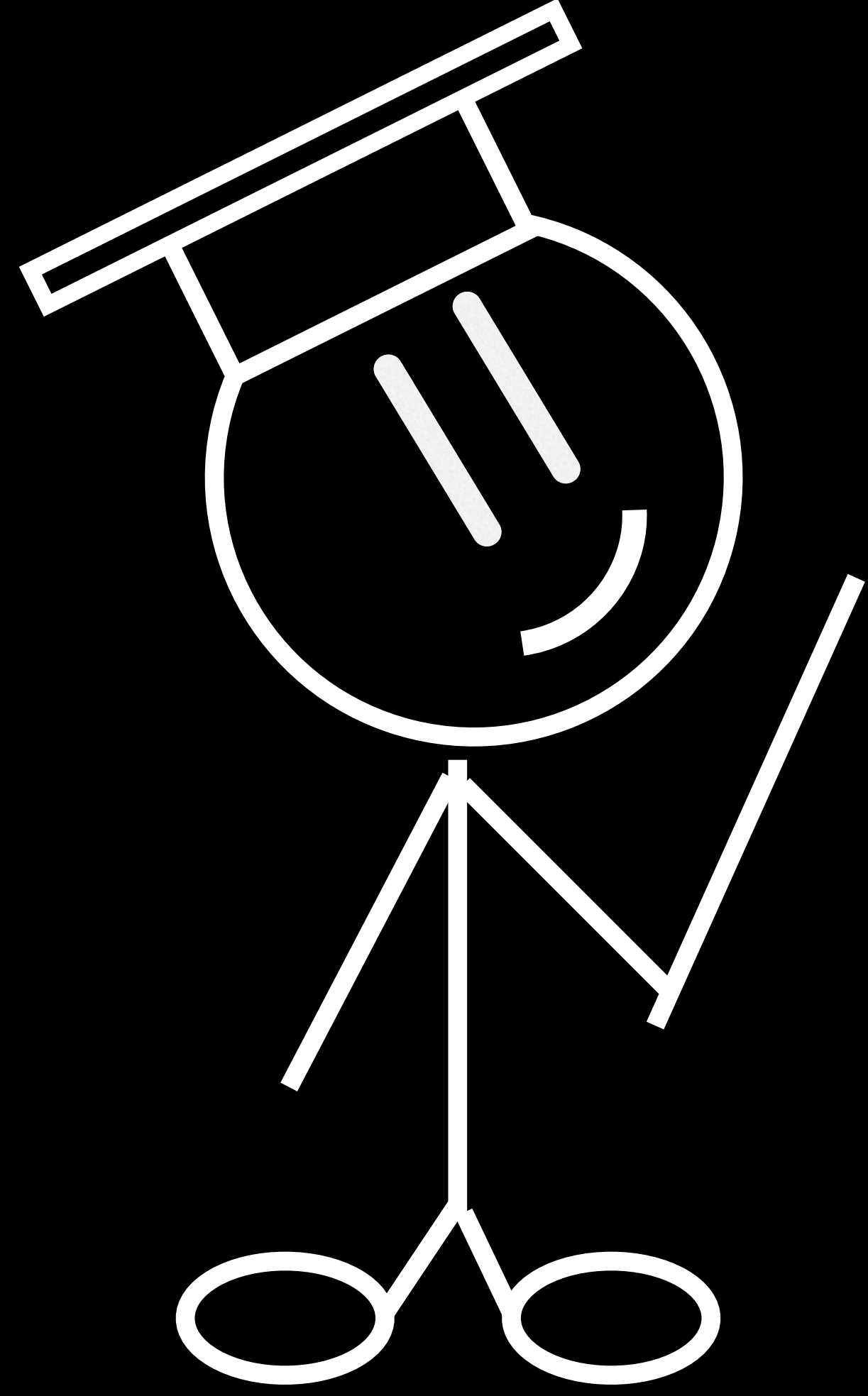


Smarter Every Day

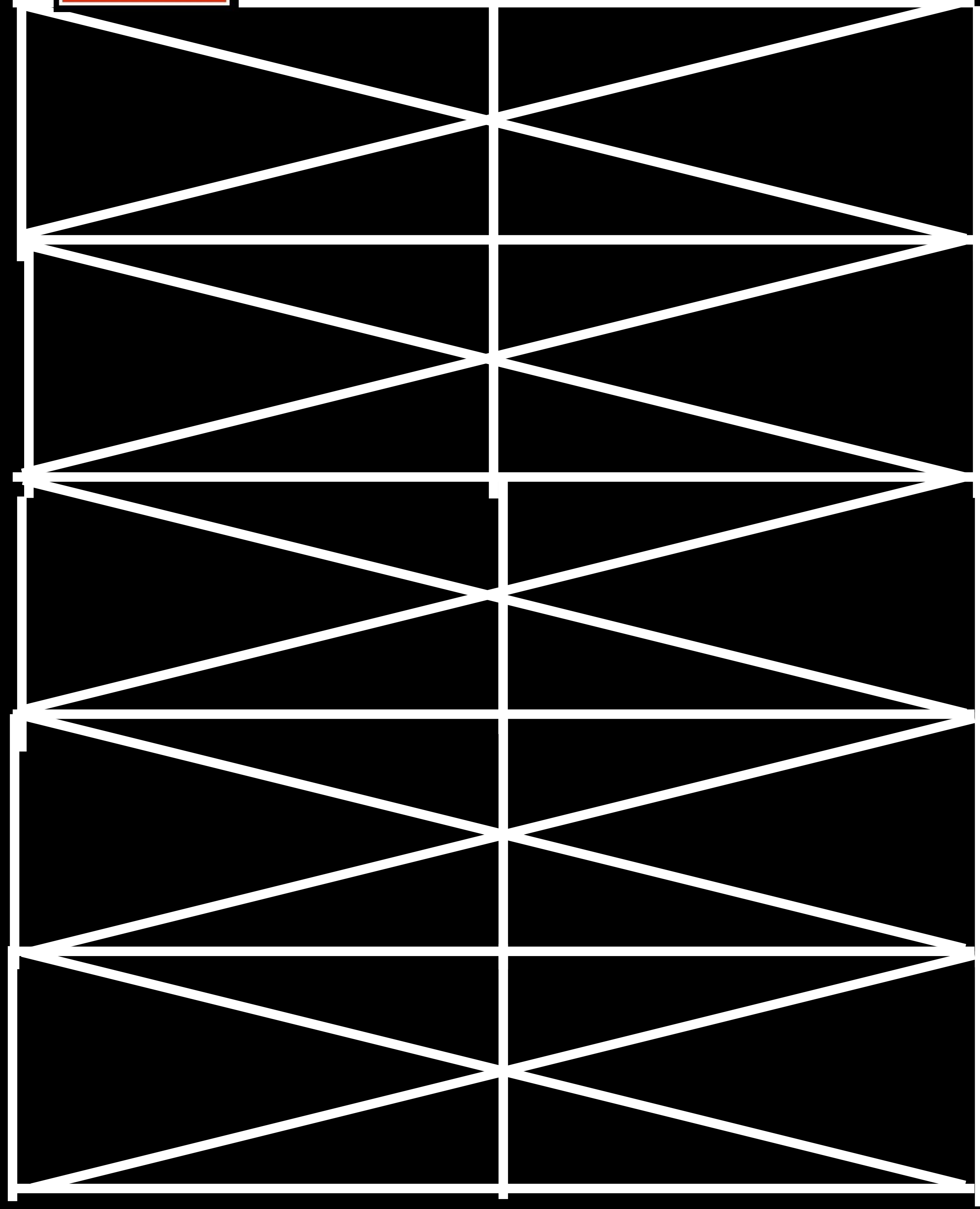








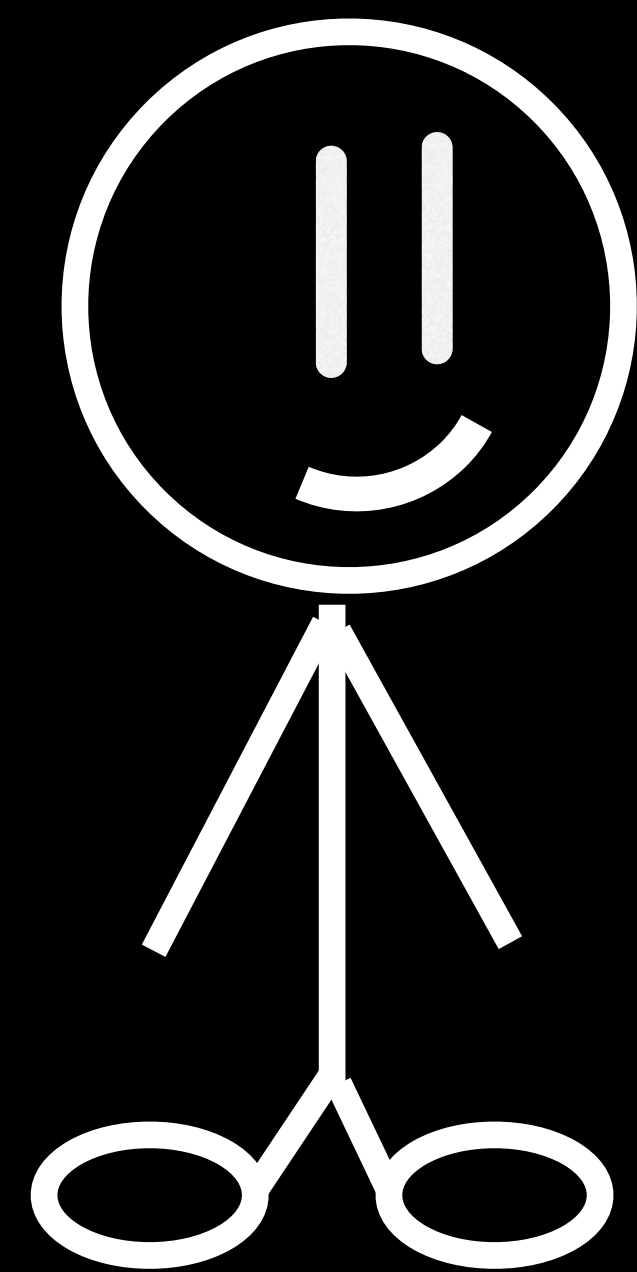
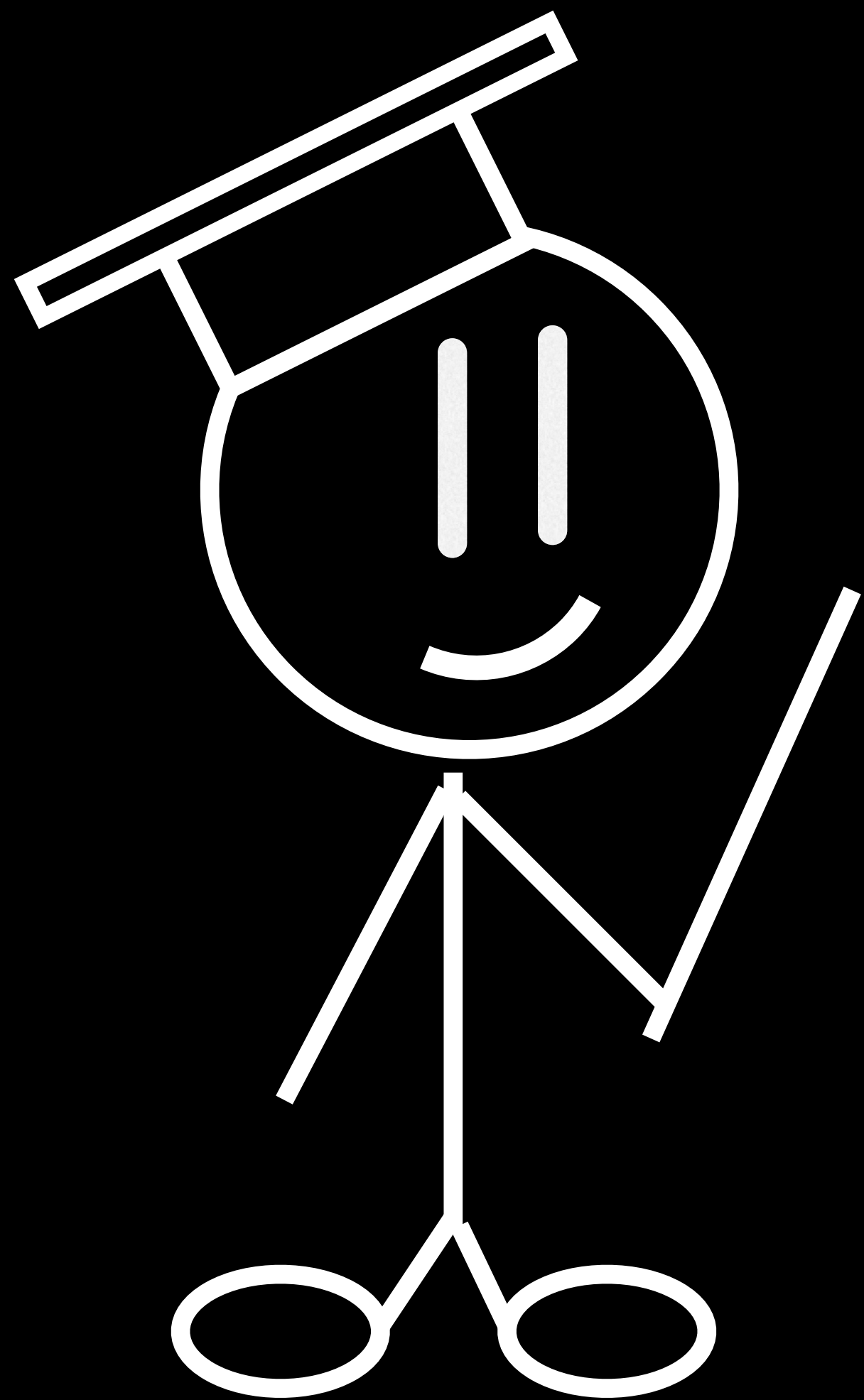
**a**utonomy



Scaffolding



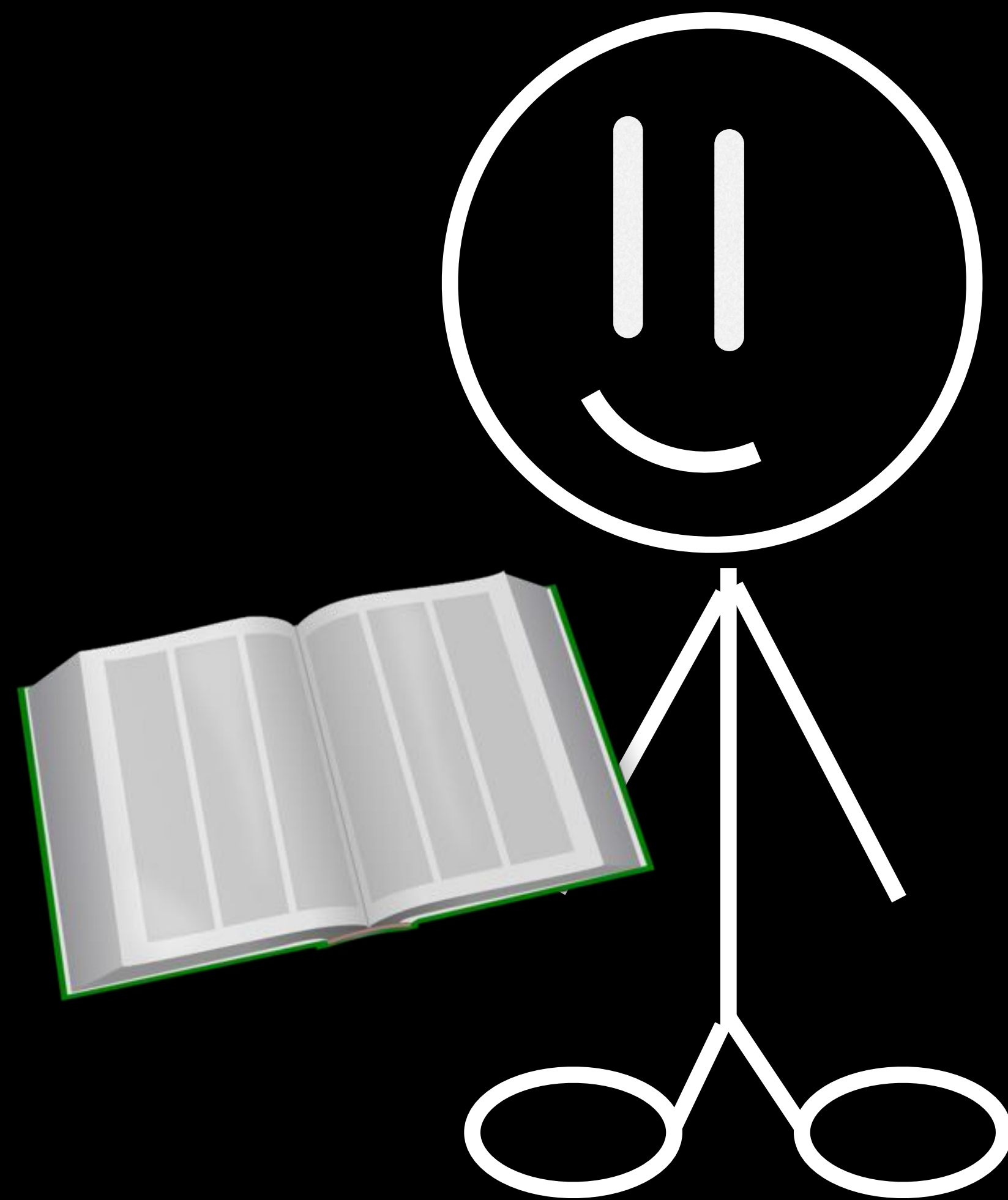
# **a**utonomy



Proper Group Size

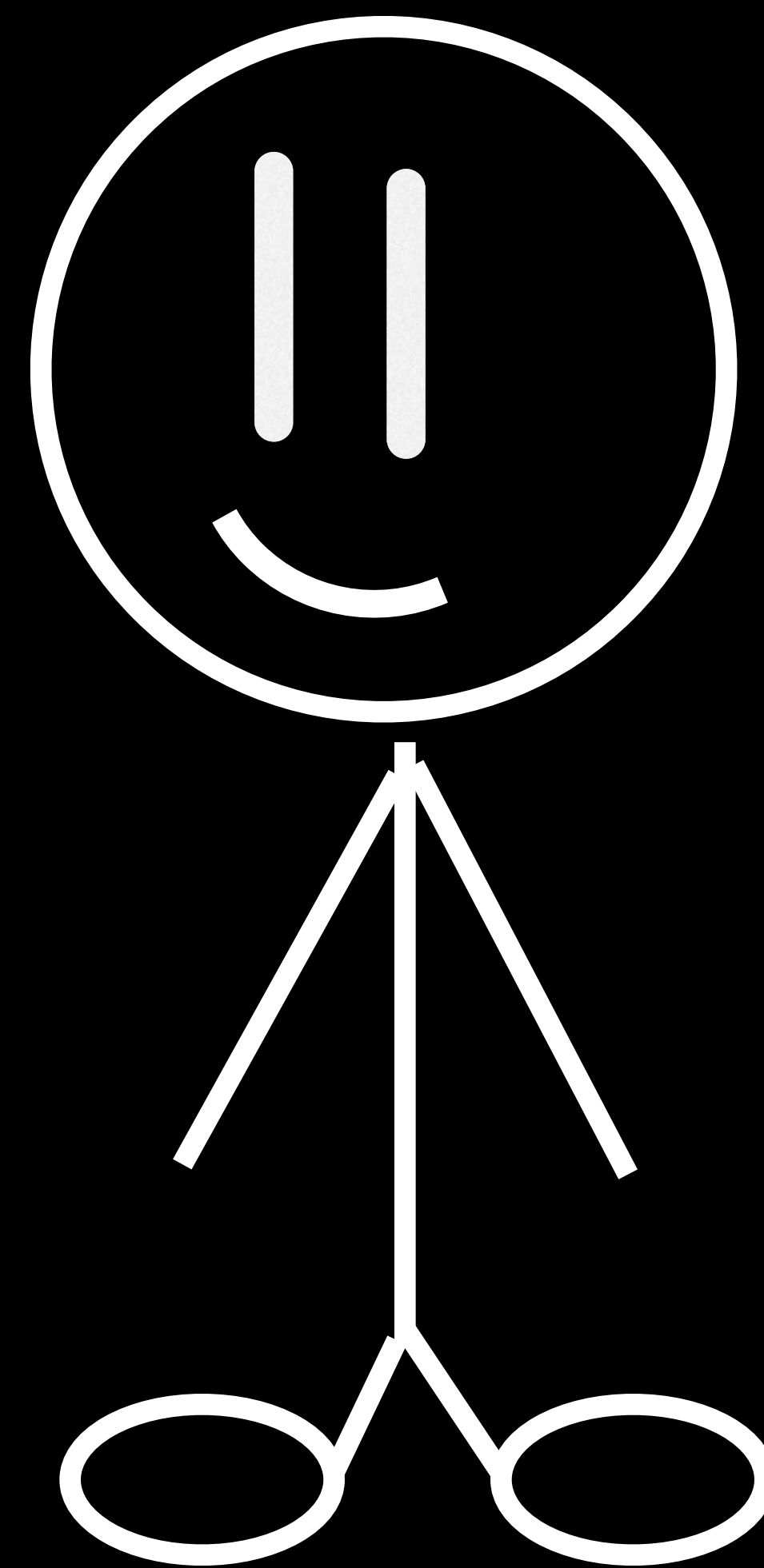
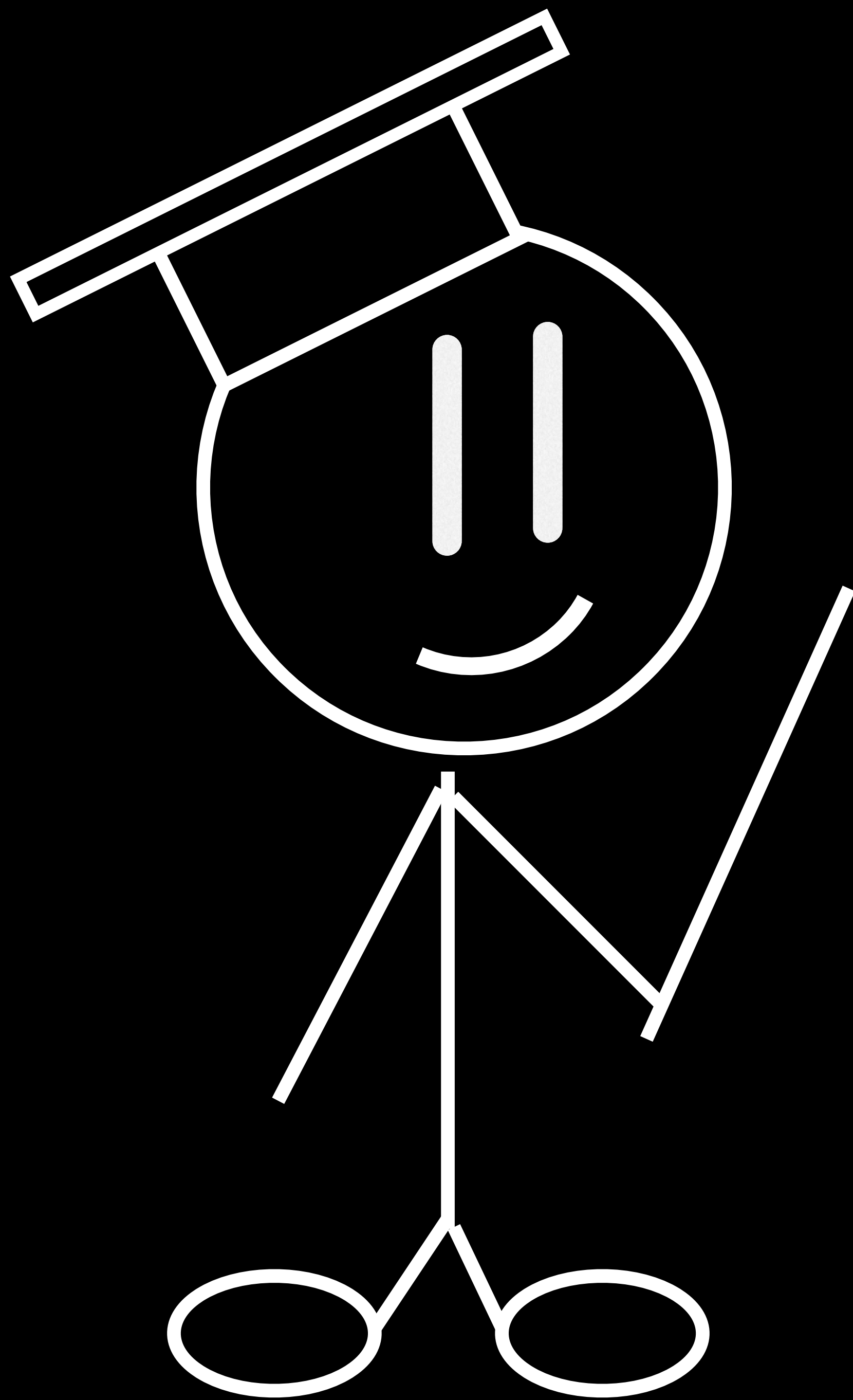


ONE is for learning, private and active.



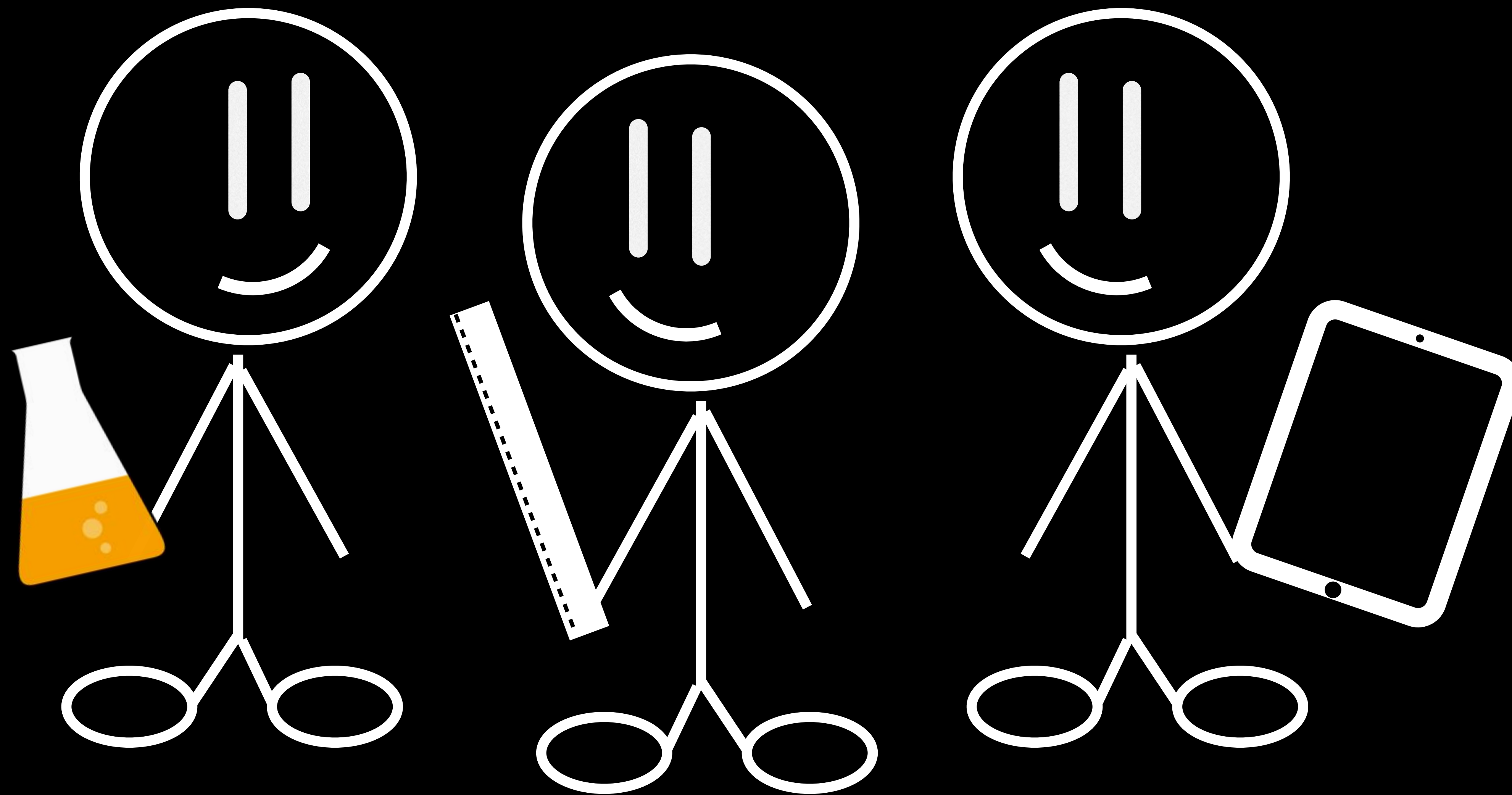


TWO is for teaching, it goes both ways.



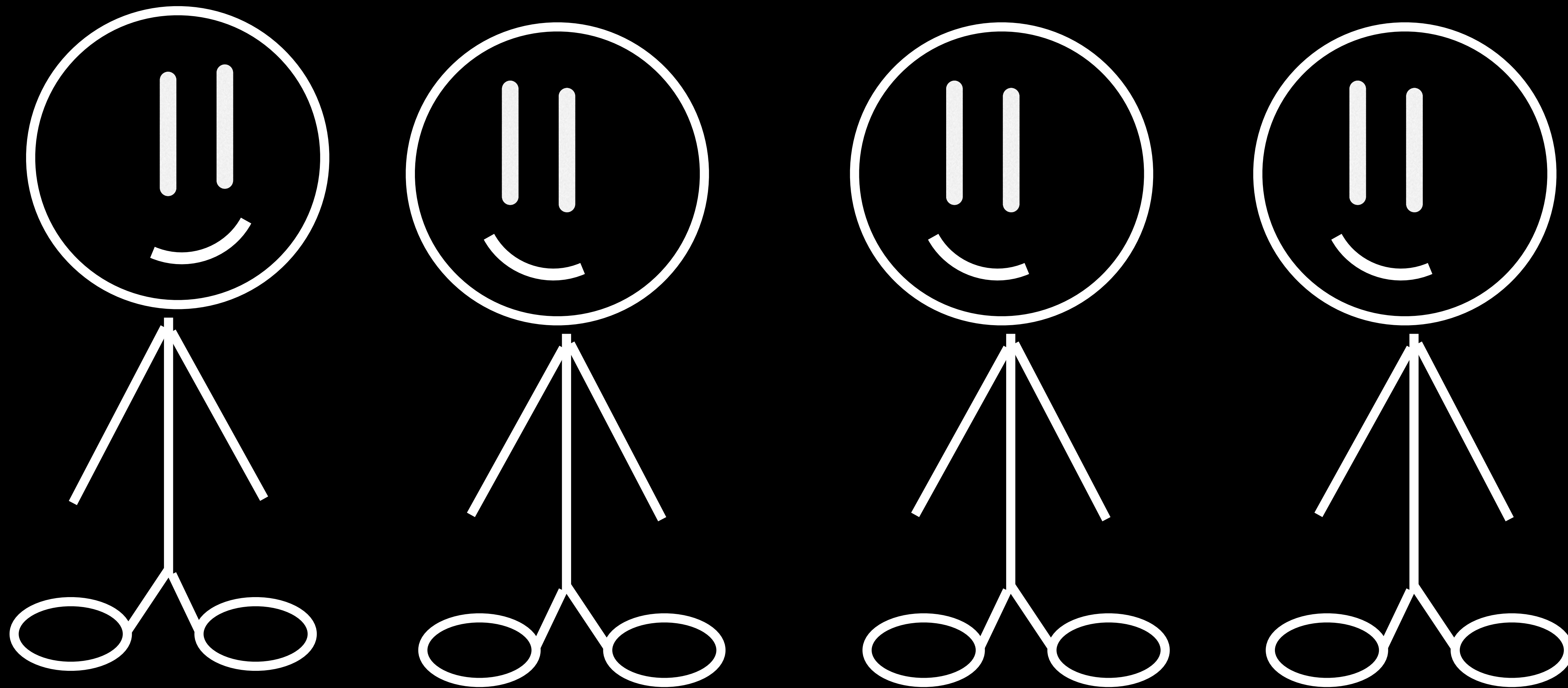


THREE is for working, the job divided.



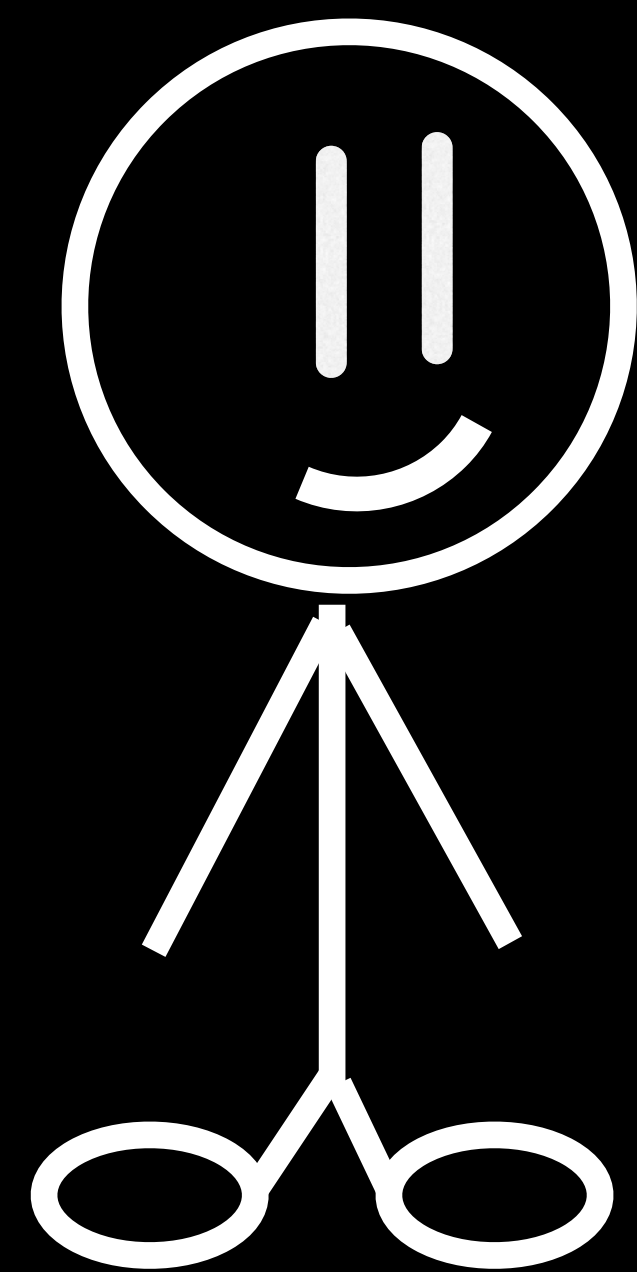
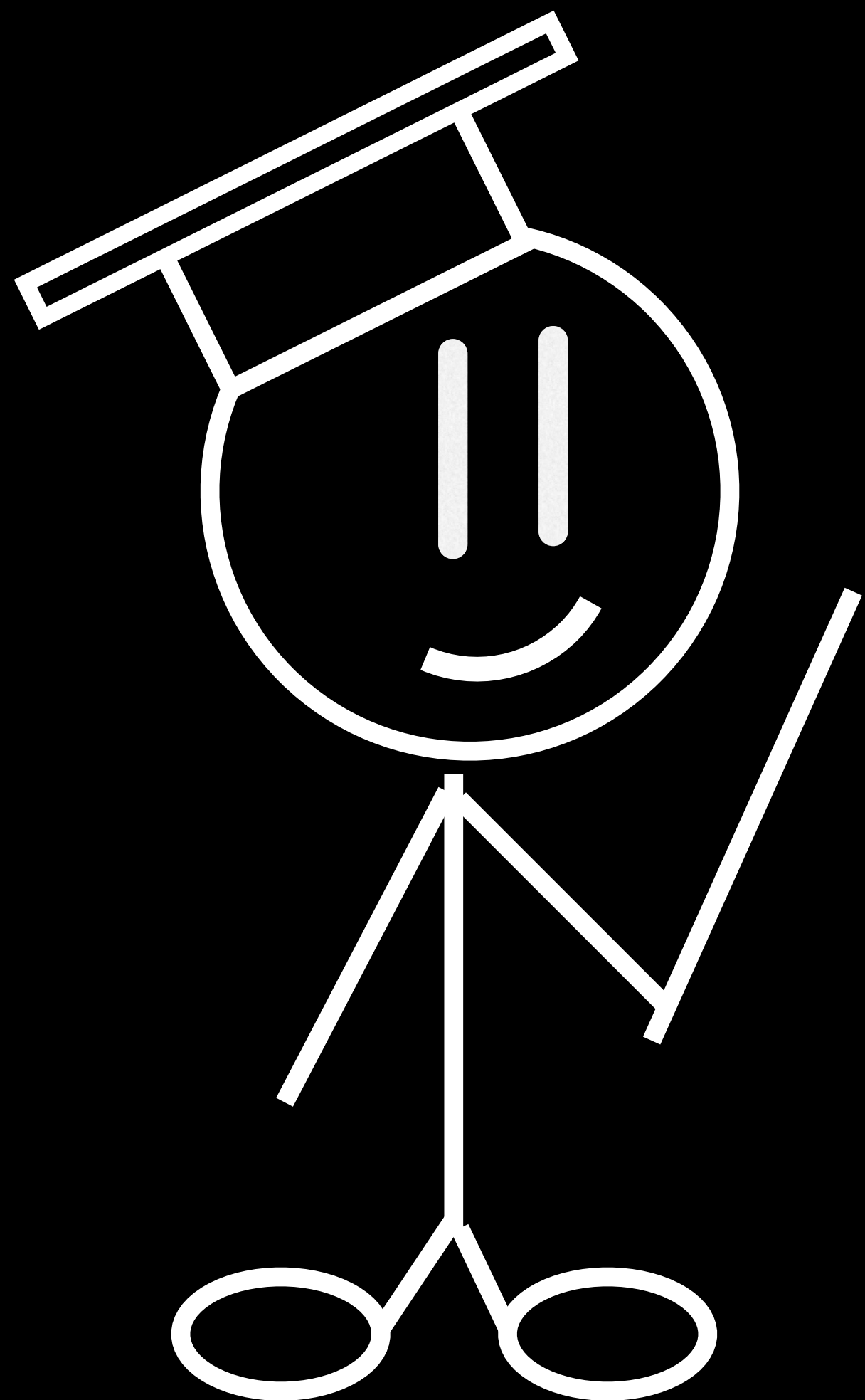


FOUR is for nothing but wasting the days.





# **a**utonomy



Inquiry  
Reading

Graphing  
Writing

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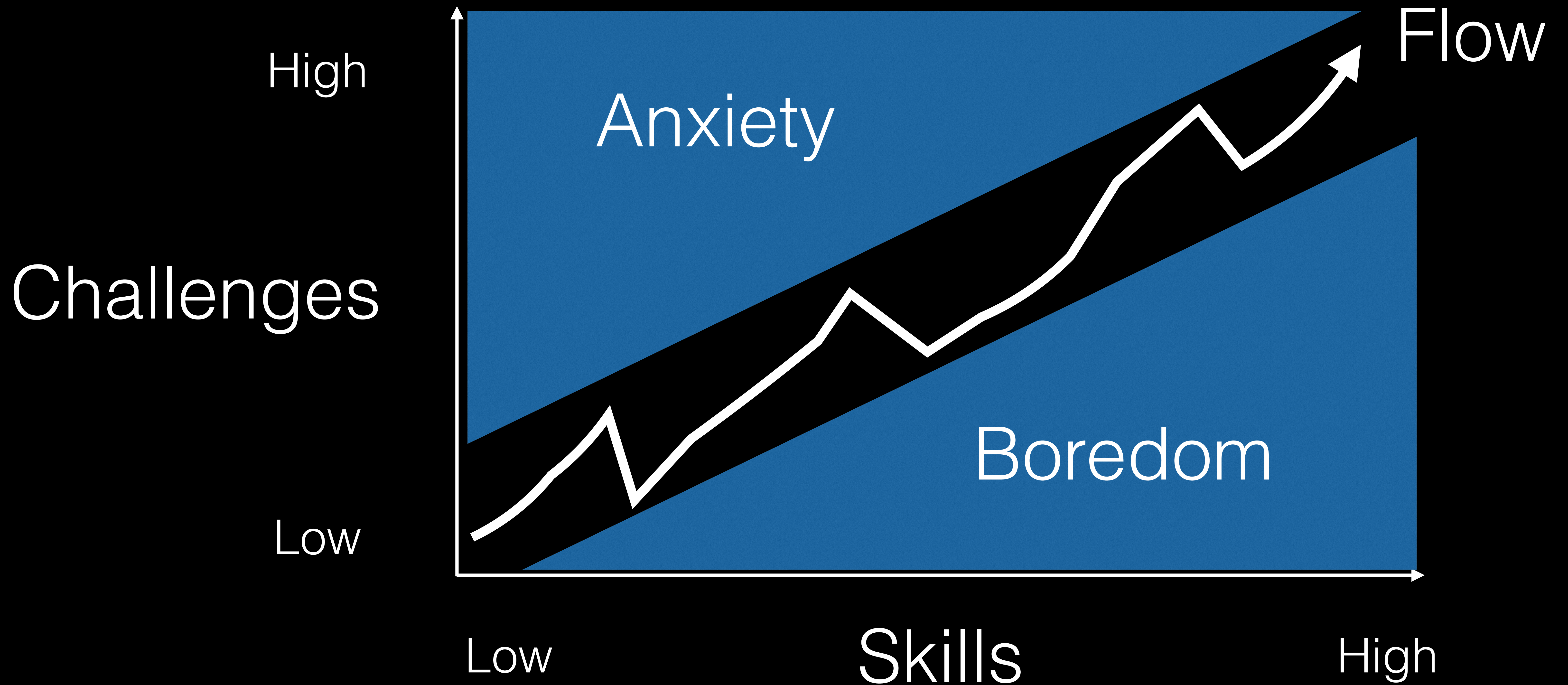
Why are games fun?







# Flow





last slide

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**l**

**a**

**y**



